

MANUFACTURERS' RECORD.

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER.

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I. S. FIELD.

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TO FOREIGN COUNTRIES, - - 26s. 6d. a Year.

BALTIMORE, JUNE 28, 1895.

A Hundred-Fold Return.

Mr. W. P. Blasingame, dealer in farm and fruit lands, Fort Valley, Ga., has had an advertisement in the *Southern States* for the last six months. In paying for it and ordering its renewal in double the space, he writes:

It is for me pleasure to pay this, for the outlay has yielded more than a hundred-fold in returns. Your magazine surely covers the whole land. As a direct result of my advertisement in it, I have had inquiries from nearly every State in the Union, and a great many especially from the Northwest. It has been the means of bringing several investors, and settlers here, for we only need to get people to come and see this country to induce them to invest or settle. The single line in my advertisement, stating that I could furnish "gilt edge" 8 per cent. real-estate mortgages, has interested several investors, and already, as a result, one man from Massachusetts has come and arranged with me to organize a loan and trust company.

Your magazine has been worth much to me and to this section, and, I believe, a blessing to the whole South. I believe that the *Southern States* is the best friend the South has ever had.

Every town and every property in the South desiring to attract the attention of Northern and Western buyers should advertise in the *Southern States* magazine. It is published by the Manufacturers' Record Publishing Co.

What Self-Help Does.

Cheraw, S. C., is another town in the South that believes in self-help. As a result of following this principle its people have established a knitting mill which, although recently completed, is working full time, and will have to be enlarged to meet the demand for its goods. A new packing-house built by self-help is about to begin operations, and the people are now planning to build a \$150,000 cotton mill by self help.

Self-help is the best help, and the Southern communities which follow this rule, so long advocated by the MANUFACTURERS' RECORD, will find it is the best every time.

THE MANUFACTURERS' RECORD recently announced that the Mecklenburg Iron Works, of Charlotte, N. C., would put up a Thies chlorination plant for testing Southern ores. This plant has been completed and is now prepared to make tests of Southern gold ores.

Be Careful.

From all parts of the country come reports of a wonderful increase in business. Manufacturing enterprises are crowded with orders, new concerns are being started, old ones are adding to their plants, railroad companies are preparing to make long-needed improvements to rolling stock and track, and many new short lines are being constructed. Throughout the South these conditions are pre-eminently true. The outlook for the future for this section was never before so promising. The wide diversity of manufactures, the great increase in immigration, the development of railroads and the extension of foreign trade are all uniting to give to the South a period of wonderful prosperity. There is but one great danger to this section, and that is the danger of overdoing this development and of running into booms. The experience of the past should teach a lesson never to be forgotten, but the business people of the South must see to it that they are not led by the spirit of activity now prevailing into boom methods. The South wants no more fictitious booms.

Iron and Steel in the South.

The improvement in the iron trade which we have recorded continues unabated, and, indeed, is gathering in volume. In addition to the furnaces now operating in the South, preparations are being made by the Tennessee Coal & Iron Co. to start the two stacks at Oxmoor, Sloss is pushing repairs on the single idle furnace and will start soon, Gadsden furnace will shortly be blown in, the two stacks at Woodstock are being placed in readiness, Gracy-Woodward, at Clarksville, Tenn., is expected to begin soon, and at other plants preparations are being made for a start.

The total capacity of plants which will likely go in within thirty days is about 1400 tons per week. There is an ample margin between production and consumption to absorb this. While a number of furnaces in the North have gone into blast, their total capacity is only about 1500 tons, and this, with the addition of Southern plants, will not give over 3000 tons per week over our present production, while consumption on June 1 was 25,000 tons per week in excess of production. Since that time consumption has, if anything, increased. Certainly there is no sign of diminishing. Many concerns have been making every effort to provide a place for iron purchased at prices then prevailing, as after July 1 the advances go into effect on all shipments, whether made on old or new orders. This gives the im-

pression of greater consumption than is actually the case; but the proof that consumption is not declining lies in the number of new orders taken in at current quotations, and in that nearly all makers of standard brands are sold ahead as far as September deliveries, and in some cases even farther.

One feature of this heavy advance in the price of iron which is particularly worthy of comment is that in the South, where there are a number of idle stacks, built during the "boom," there has been uniform caution displayed in starting any of these. The owners are figuring close, but still they are figuring, and when the price reaches a point where they see a safe margin of profit they will start, but not before. At the beginning of the rise it was freely predicted by some iron-trade journals that the rise would result in the immediate resumption of nearly, if not all, the Southern plants, and as a result the market would be flooded with iron and the price again seek its former low level. This has not been the case. The first furnaces to go in were those belonging to large companies which were sold far ahead; then followed others in which the cost of production was well within selling prices.

Another important feature of the iron market to which we have referred frequently is the active steps being taken in the construction of steel plants. It is too early just yet to venture any predictions as to the immediate result of such movement. It is understood that three projects are being considered in Birmingham, two of which are under way. The plant at Middlesborough may soon be expected to become a producer, and there is a possibility that the strong company which has taken hold of the Sheffield plant may conclude to use all or a part of its iron for similar purposes. None of these are "boom" or speculative movements. What will be the future of the Southern iron trade when they are accomplished facts? When Bessemer iron sold for \$9.30 in Pittsburgh, billets sold at \$14.50. If the South can make iron for \$6.50, as has been and is being done, even though the somewhat more expensive basic process is used, would there not be a margin of \$4 or \$5 in favor of Southern steel, even when compared with Pittsburgh prices of three months ago? And when compared with prices today the margin would reach \$6 or \$7. With such a difference it is not surprising that these proposed steel plants are rapidly assuming the shape of realization, and that those already built are seriously planning active operation.

That the South has not as large and cheap supply of Bessemer ores as Pittsburgh and Chicago is used as a clinching argument against Southern steel-making. But why has Belgium, with no Bessemer ores, forged so rapidly to the front

as a steel-producing country—so rapidly, indeed, that it has been able to invade the British home market? The answer is simple—the basic process. With suitable selection there will be no difficulty in finding in the South ores suited for this process. The matter of scrap iron, hitherto regarded as a serious obstacle, may be overcome, and soon would be after the operation of steel works and the industries which would quickly follow them. Then, what is the future of the South as an iron and steel producer?

An Important Railroad Enterprise.

The Chesapeake & Western Railroad, which the MANUFACTURERS' RECORD has already mentioned, assumes great importance in view of the fact that its president is Mr. J. W. Reinhart, late president of the Atchison, Topeka & Santa Fe road, one of the greatest systems in the world. The coming into the South of a man of such prominence in the railroad world as Mr. Reinhart is but another indication of the concentration of the great business and financial powers of the country in Southern development work. This road is being built by the Old Dominion Construction Co., of which Mr. E. C. Machen is president. Forty-four miles have been graded and ties are now being put down. Eighty-pound steel rails are being purchased, and the shipment from the Carnegie works for enough to lay sixty-five miles of track has commenced. Two new heavy standard engines, out of first contracts for equipment, are now due, and will be put on track work as soon as received. Five miles of track, from Harrisonburg to Dayton, will be in operation by July 4. This will be the first new road ever built which was laid with 80-pound steel rails at the start. The work of grading and general construction will be of the most substantial character, with equipment of latest type, indicating that the Chesapeake & Western is preparing for the heaviest traffic that can be handled by any road. Twenty-seven miles of line, the rails for which are now being received at Harrisonburg, will carry the road across Rockingham county, from Elkton (on Shenandoah division of the Norfolk & Western road), through Harrisonburg, on the Baltimore & Ohio road, to Bridgewater. This cuts across the Valley of Virginia and opens up one of the finest agricultural regions in America, and one which for general agricultural productions alone could make profitable such a railroad, but in striking westward towards West Virginia this road is pointing towards the very heart of the timber and coal district of that State by the most direct and shortest line obtainable. It is possible for this line to be extended into these coal and timber fields and open up a region of

almost infinite freight-creating possibilities. As stated in the last issue of the MANUFACTURERS' RECORD, the construction of the forty-four miles now under contract was first brought about by the attention attracted through the action of Rockingham county in deciding to contribute \$150,000 towards securing such a line, and at the same time to give all possible help in the way of aiding and securing rights of way and other facilities needed in railroad construction. The result of this was to bring the matter to the attention of Mr. Reinhart and his associates, and to cause them to make a thorough investigation of the possibilities of such a road. The people of those sections of Virginia and West Virginia which would be reached by the extension of this road westward and eastward possibly have it in their power to secure this by the same spirit of co-operation. The building of these extensions and the benefits which will flow from such developments as would naturally follow the opening up of this territory would naturally prove of inestimable value to both States.

That Mr. Reinhart, with his strong financial connections and his tremendous personal power, in carrying out his operations, should have turned his attention to the South as the most inviting field for railroad work, is a matter of congratulation as another indication of how the great financiers and developers who created the mighty Western empire are now concentrating their work upon the South.

Good Roads.

The construction of macadamized roads around Charlotte, N. C., is still being pushed, and in view of the effect of good roads upon Mecklenburg county, the following data with reference to road-building in that county, given by the engineer in charge of the work, will be of interest:

Most of the stone is furnished by the farmers, the county paying forty cents per cubic yard for the stone piled on the roadside at designated places. A small proportion of the stone is quarried by the convicts.

The roads cost about \$2800 per mile.

The county now has about thirty-three miles of first class macadamized roads.

The number of convicts now engaged in road-building is about eighty.

It costs the county about twenty six cents per day for each convict maintained and worked on the roads. This cost includes food, clothing, shelter and guarding. The convicts live in camps at points along the road near where the road building is being done. The shelter is a cheap structure of wood and canvas, something better than a tent.

The advantages of using convict labor are:

- (1) That an organized force can be better maintained than could be done with free labor for road-building.
- (2) It is cheaper than free labor would be.
- (3) It frees the county from the expense of keeping prisoners without any return value.
- (4) It engages convict labor in healthful occupation without bringing it in competition with free labor.
- (5) It is the best possible punishment for the common criminal.
- (6) It cures the tramp nuisance.
- (7) The result (good roads) is a benefaction.

The county owns a crushing plant, consisting of a stone crusher, a forty horse power engine and boiler. It also owns a heavy steam roller, screening apparatus, carts, mules, etc.

Lands in the county have been materially increased in value as a result of the improved condition of the roads.

Many new settlers have been attracted by the new roads.

Considerable capital has been invested in enterprises in Charlotte because of the good impressions made by the good roads leading out of the city.

The road-building is done entirely by convict labor, excepting only a few skilled workmen.

A correspondent of the MANUFACTURERS' RECORD writes:

Formerly the Mecklenburg roads were horrible. Now we have fine drives in every direction out of the city. Much of Charlotte's prosperity is due to the good roads she is building into the country.

Now is the Time to Work for Immigration.

The MANUFACTURERS' RECORD believes that the most important question before the South today is how to attract settlers. The incoming of hundreds of thousands of new people would stimulate every industrial and railroad enterprise, create a home market for the products of factories, bring about a diversity of industrial employment as well as of agriculture, and create new avenues of employment for the rising generation. Because of these facts it presses the importance of this matter upon public attention. The *Southern States* magazine in its last issue presents some interesting points on this subject. It says:

"No one who sees the South at present for the first time can fail to be attracted by the opportunity it presents to settlers from other sections, and to farmers and fruit-growers especially. With its orchards burdened with fruits, and its trucking farms blessed with great crops of watermelons, berries and vegetables, of which thousands of carloads are moving to Northern markets, a Western man seeing this section would feel that it is a veritable Garden of Eden as compared with his own country. Moreover, a visit just now would dispel the false notions about the South's climate, and prove the truth of the claims that the summer climate of the South is infinitely preferable to that of the West. The belief that the South is mainly suited to cotton-production, and that the climate is hot and enervating, are the two greatest barriers in the way of a larger movement of population southward.

"Object-lessons furnish the most forcible way of impressing truth. A visit to the South at this season would be a great object-lesson which would open the eyes of those who do not know the South to its varied attractions.

"Every railroad in the South ought to make a special effort to bring thousands of Western and Northern visitors to spy out the land now while the growing crops and the burdened fruit trees show as nothing else could do the wonderful agricultural capabilities of this section. Trade organizations, land and immigration companies ought to combine with the railroads in seeking to awaken the widest possible interest throughout the North and West in a visit to the South. Special excursions at cheap rates ought to be worked up and strong inducements offered the people to see the South in the glory of its great fruit crops and in the promise of large grain and general crops. Now is the time to act.

"This suggestion is emphasized by the following letter from Stockville, Neb., to a gentleman in Kentucky, written May 24:

"One of the most direful drouths that have ever visited the Northwest seems apparently to be upon us. Many of the most enthusiastic men of our country have despaired and given up all hopes of raising any crop this year. We had a failure in 1893 and 1894 also, and now our people are placed in the most deplorable condition known in the history of our State. Our people are leaving as fast as due preparations can be made. Most of them are going Southwest. There is a large soldiers' colony organization going into Georgia, that has a membership of several thousand, from this State; another of the same character going into Utah, starting from here in September or October next; while a third is just being formulated, going into Alabama and Mississippi. A representative of the last-named colony left our country only a few days ago to view the lands

offered, and if possible make a permanent organization.

"Our people are mostly all Northern people and are abreast of the time. Many of them through all these years of drouth have been self-sustaining, until now they are almost penniless—the most wealthy have nearly come to a level with the poorest. As an agent in the sale of all kinds of school supplies I can safely say that you could not, from a personal knowledge, induce a better class into your country for the advancement of the public schools and the State generally.

"I have been requested by several citizens to write you at once and see what inducements you could be able with short notice to give a few hundred, or as many as might wish to join in moving to your State, with reference to land, free transportation for families, household goods, stock, etc.; also free transportation for an investigating committee to go and return, etc. As a representative, in part, I am acting in behalf of many who must soon move to some other portion of the United States. Most of our people are farmers, while we have a few of various trades. If possible, they want a healthy climate and good water. Their knowledge of farming would reclaim with proper cultivation and care almost any of the so-called worn-out farms of your State. I wish to know the prospect for fruit and farm products this year, also the price of improved and wild lands."

"A great opportunity is presented by the flow of immigration to the South through the purchase of large tracts of land on which to establish self-supporting colonies, with central villages or towns, in which all the colonists within a certain radius of them should live. One of the most marked features of the phenomenal progress in material affairs made by the Mormons of Utah has been the establishment of farm villages. In these well-located, substantially-built villages the farmers live in comfort, enjoying school, church and social advantages, while the farms may be from a mile to several miles away from the village. In this way the isolation of ordinary farm life is avoided, and the prevalent tendency of the young people to leave home and move to the cities is greatly lessened. The farm-village plan should be widely adopted in the South. With the experience that has been gained in the development of the West through immigration, and the successful outcome of the farm-village idea in Utah, the South has the opportunity of learning by the experience of others. Now that population is tending southward so largely, it is feasible to organize many colonization enterprises, securing for each colony a sufficient tract of land to justify the establishment of one or more villages as central points for the colony. As in Utah, this could be made the residence place for all farmers whose land might come within a circle of several miles of the village. The small loss of time in going back and forth to farm work would be more than counterbalanced by the added attractiveness of life in the village and the better social and educational facilities which could be furnished to the families. There is a great opportunity in the South for the utilization in its new period of development of all the experience gained in other sections, and this idea is one worthy of consideration."

English Surprise at Cotton-Mill Progress.

The Bridgman Place Machine Works, of Bolton, England, manufacturers of textile machinery, in a letter to the MANUFACTURERS' RECORD referring to the statistics given of cotton manufacturing in the South in the Cotton-Mill Edition, says:

We note with surprise the increase which is taking place in the Southern States in cotton spindles. We think that machinery could be

sent from England and delivered in the Southern States at less price than from any other place, that is, with quality and finish taken into account. If we could deliver machinery in the United States at as low figures as the New England people can, then we feel sure we could meet them in the South if we had the same advantages and conditions.

English Fear of Southern Iron.

"That country or that section of country which can produce and market iron at the lowest cost will eventually dominate and control the commerce of the world." Such is a statement made some years ago by Mr. Edward Atkinson in a letter to the MANUFACTURERS' RECORD referring to the South's iron-making possibilities. The South has now demonstrated that it can make iron at a lower cost than any other part of the world, and it looks forward to a fulfillment of this prediction. The efforts that are being made to push Southern iron into foreign markets are now commanding wide attention in Europe and creating fear on the part of English ironmasters that they are soon to have an active competitor in their own market. Some years ago, when the MANUFACTURERS' RECORD predicted that the time would come when Alabama would export iron to England, this view was ridiculed and regarded as the wild claim of a visionary enthusiast. Its fulfillment is not far distant. Referring to the letter of Mr. James Bowron, of the Tennessee Coal, Iron & Railroad Co., recently published in the MANUFACTURERS' RECORD, in regard to the arrangements that are now being made to introduce Alabama iron into Europe, and to the interest that this has aroused in England's iron circles, the Manchester correspondent of the American Manufacturer, of Pittsburg, says:

Since my last quite a sensation has been occasioned amongst iron and steel masters on this side by the news from Birmingham, Ala., that the Tennessee Coal, Iron & Railroad Co. has determined to send an agent to Europe with a large shipment of Alabama pig iron to be sold in places on the Continent now controlled by English iron manufacturers. After quite recent optimistic utterances by certain commercial weather prophets, from the Chancellor of the Exchequer and the governor of the Bank of England downwards, this report and all the details which accompany it have come with a most rude awakening. The only point upon which, according to the accounts which have come over to this side, the Alabama company entertains any doubt of their ability to undersell us is in case the ship owners should discriminate against them in the matter of ocean freights. Your Southern ironmasters need not, however, be anxious over this matter. Patriotism counts for very little in business, and though the ship-owners as a body may be English, you may take your English correspondent's word for it, they are not likely to throw away the chance of a good trade between Southern American ports and the Continent out of any sentimental regard for the "mother country."

The Tennessee Coal, Iron & Railroad Co. can rest itself easily that if it can undersell us, which, unfortunately, British iron and steel men can today scarcely doubt after all the recent revelations as to the low costs at Southern States' furnaces, it will experience no difficulty on the part of ship-owners in opening up a trade with Europe at the expense of the poor Britisher. "It is possible," remarks one trade critic this week in one of the most important of our iron and steel centres on this side, "that the American pig may not suit many purposes for which the British articles are wanted in Germany and Northern markets, but in the South of Europe we have little doubt that they will be able to obtain a footing and keep it so long as American prices are maintained at their present low level."

The outlook which this latest intelligence from Alabama forces upon us, following upon the most remarkable success of your Birmingham iron pipe foundries in securing the recent £74,000 contract for the water-works extension of Tokio, Japan, is beyond question a very disturbing one, and not for our ironmasters only, but for our manufacturers generally. Where iron leads the way other metal manufactures sooner or later follow, and between American competition on the one side and German competition on the other British trade by and by can hardly fail to find itself in a

tight place. The pinch at first, doubtless, will be felt chiefly by our Northern iron producers, but it is obvious that if they are displaced to any serious extent in continental markets they will look for compensation in others, and will compete more and more with the iron producers of other English districts. Thus the effects of this new development of American competition will be brought home to everyone, and the last state of our manufacturing industry will be worse than the first. Our only hope of escape from the dilemma which threatens is that with the revival of trade on your side and the progress of the era of prosperity upon which America is now supposed to be entering, wages and prices will continue to rise to a sufficient extent to stay this real danger before it is too late. The practical limit of cheapness in iron prices and cost of production in this country, under present conditions, has long since been reached. Indeed, in several directions it has been passed. Our prices, therefore, cannot go any lower, whatever American iron comes into Europe.

A Good Move.

The MANUFACTURERS' RECORD, of Baltimore, whose special mission is to tell the world of the South's marvelous resources and rapid development, which mission it is filling in a highly successful manner, has inaugurated another move which, if carried to a successful consummation, will mean much for this section. The MANUFACTURERS' RECORD is endeavoring to induce the New England Cotton Manufacturers' Association to hold its next semi-annual meeting in Atlanta in October. The MANUFACTURERS' RECORD says:

"This association, representing the entire textile interests of New England, has a membership of 382, and should it decide to visit Atlanta it would doubtless carry a very large proportion of its membership. The matter has been received with much favor, and a meeting of the board of governors will be held on June 22 for discussing the question. It is to be hoped that the decision will be favorable. Such a visit would be of great value to the South. It would bring to this section, to study its resources and investment opportunities, the men who control the entire cotton-mill interests of New England. But greater even than the direct value to the South of such a visit would be the benefit to all sections from the closer acquaintanceship that comes through such business interests as are developed by meetings of this kind. The MANUFACTURERS' RECORD would urge upon the directors of this association the desirability of such a meeting as this in Atlanta. It would be profitable to New England, to the South and to the country at large."

The meeting would be held, too, during the Atlanta Exposition. At the exposition the visiting millmen could see the entire South in miniature, as it were, and could not fail to be greatly impressed with this section's unsurpassed advantages, such as will make it the future seat for the cotton-manufacturing industry of the world. Good results would surely follow, and Alabama would reap her share of them.—Birmingham News.

The value of this meeting cannot be overestimated, but the association has not yet been able to decide because of its failure to secure full information about routes, rates and accommodations, although the matter has been in the hands of Southern railroads for a month and they promised full and prompt attention. One of the officers of the association, in a letter to the MANUFACTURERS' RECORD, says: "Up to present time we have really nothing tangible to act upon."

WITHIN the last ninety days the wages of over 250,000 hands have been advanced an average of nearly 12 per cent. This remarkable increase in wages shows how widespread is the revival that has already commenced. So far the increase has mainly been in iron and steel matters, and it is in these that the most phenomenal activity is seen.

THE East Tennessee Packing Co. has been organized at Knoxville, Tenn., with a capital stock of \$25,000. This company proposes to build a packing-house, and use for this purpose a slaughter-house now operated by the Knoxville Butchers' Association. It will also put in a refrigerating plant of about ten or twelve tons capacity. The establishment of packing-houses in connection with ice and refrigerating plants is one of the best lines of progress which the South can make.

BIRMINGHAM'S PROSPERITY.

Railroads and Industrial Enterprises Crowded.

[Special Cor. MANUFACTURERS' RECORD.]
BIRMINGHAM, ALA., June 24.

Birmingham's bank clearings have repeatedly shown the largest percentage of increase over last year of any other American city during the past two months. Week before last that increase was 176.6 per cent., with Spokane, Washington, second at 86.6 per cent. Last week Birmingham's increase over last year was 76.6, while that for the country at large was 29.

The Alabama Car Service Association embraces all stations in Alabama and in intermediate stations to and inclusive of Meridian and Columbus, Miss. For the month of May, 1894, the association handled in its entire territory 13,328 cars, while during the month of May, 1895, the number handled in the Birmingham district alone was 10,476, or 3148 more than in the entire territory last year. During the month of April, 1895, the number handled in the Birmingham district was 14,938, an increase for May over April of 1538 cars. There has been an average increase of the coal and iron output for the district of fully 100 per cent. The Tennessee Coal, Iron & Railroad Co.'s output for last week in pig iron in this district was 9690 tons, while for corresponding period last year it was 4751 tons. Its coal output for same period this year was 42,525 tons, as against 27,543 tons for same period last year. Further than this, there is not an available coke oven in the entire district that is not now being used to its utmost capacity, while the Tennessee Coal, Iron & Railroad Co. say it is now doing the largest business it ever did in the history of the company at this season of the year.

The general belief among our ironmasters is that another advance in iron is inevitable and close at hand. Such an advance means an advance to miners under existing contracts, and will distribute many thousands of dollars monthly more than now to that class of labor. All our industrial plants are running on full time, while the Birmingham Rolling Mills has been importing men for some ten days or more to meet its increasing orders.

New enterprises for which all arrangements have been made embrace a knitting mill to employ forty hands, a packing-house in course of erection and the Tennessee Company enlarging its plant. There are two or three large plants pending, and which are reasonably certain in the near future, but which for prudential reasons cannot now be named.

No one who has the interest of Birmingham at heart desires any more real-estate booms here, but conditions are very favorable to one of even greater dimensions than ever was known before, and the prophecies are heard on every hand that this city is on the threshold of just such an era. However this may be, the facts given are of such comforting and consoling character concerning real business improvement that it is with genuine pleasure your correspondent presents them, with the hope that they may in some degree add to the general conditions which presage better times throughout the country. N. F. THOMPSON.

Abundant Crops Promise Great Prosperity.

LOTT, TEXAS, June 23.

Editor Manufacturers' Record:

Our crops in this district are splendid. Cotton crop is about 20 per cent. less in acreage, but will make a good yield unless the constant wet weather starts the worms. Corn crop is a grand success. The people will not know what to do with it. No settler here remembers when it was ever better. There is also a great increase over last year's acreage. Oat crop is a bountiful one, but after being harvested has been

damaged by rains, which will cause mildew before it can be housed. Fruit crop is very good. Melons are fine and large. Wheat is not much raised here. Sorghum is fine. Grass! Well, there is no end of grass if it would only stay on the prairie, but the farmers are having a hard tussle to clean it out from crops, as the rains are a great drawback. The price of cattle is up and everybody is happy.

HERMAN STRICKER, JR.

A Good Record for a County.

[Special Cor. MANUFACTURERS' RECORD.]
GREENVILLE, S. C., June 24.

The people of this section are feeling very jubilant over the recent sale of the county bonds for this county. Twenty-five thousand dollars' worth of refunding bonds, running for twenty years at 6 per cent., were sold to N. W. Harris & Co., of Chicago, at 106 1-7. The bids were from all parts of the country, and the sale is the best that was ever realized in this county. These bonds take the place of the same amount of bonds issued to aid the Atlanta & Charlotte Railroad, which bore interest at the rate of 7 per cent. There were \$54,000 worth of these bonds due; \$29,000 of them were retired. This reduces the bonded debt of the county to about \$110,000, and the present sinking fund, which is fixed by statute, is more than sufficient to cancel this debt by the time it matures, with the present valuation. Another cause for congratulation among us is that our rate of taxation for this coming year is one mill less than last year. Notwithstanding the hard times, the tax valuation shows an increase instead of a decrease, which might have been expected. The increase of the assessment of property in this county is interesting. It is as follows:

In 1888 the assessment was.....	\$5,712,300
" 1893 " " " " " " " " " " " "	6,818,355
" 1894 " " " " " " " " " " " "	7,069,132

The assessment is on a basis of 50 per cent. valuation. The assessment for this year has not been made yet, but it will probably show an increase of 7 per cent. The improvements already started here will increase the assessment of next year by over three-quarters of a million. Can any other county beat this record?

W. J. THACKSTON.

Prosperous Outlook in Arkansas.

T. H. Leslie, vice-president of the Stuttgart & Arkansas River Railroad and the Pine Bluff & Eastern Railroad, writing from Gillett, Ark., to the MANUFACTURERS' RECORD, says:

"Our railroad business has been on the increase for the last year. It has increased at least 20 per cent. in that time, and we fully expect an increase of 40 to 50 per cent. in the next year.

"The Grand Prairie region of Arkansas has suffered but little by the general depression. Some little immigration has been coming in at all times, but the last year it has been very satisfactory. We have just completed a six-mile extension of our Stuttgart & Arkansas River Railroad, and contemplate a 12-mile extension on the other road in the next four months. I consider the business prospects of Arkansas, and especially this section, very promising in the near future. In my fifteen years' residence here I have never seen anything to compare with the outlook. Fruits are splendid, and all crops promise a large yield. Our saw mills have all the orders they can fill for months. Farm lands have nearly doubled in value in the last year. We only hope all sections of our great country have the bright prospects we have for the coming year, and it will become a great irresistible wave of prosperity throughout the land."

It is stated that the steamship line between Mobile and Europe has proved so profitable that two more vessels will be added to the fleet.

A NEW SEAPORT.

Sabine Pass to Be Extensively Improved.

A correspondent of the MANUFACTURERS' RECORD at Beaumont, Texas, writes that representatives of the land-owners in that vicinity are arranging to begin work on extensive wharves and railroad terminals, which were referred to by the MANUFACTURERS' RECORD several months ago in connection with the Southern Pacific Company. Among those interested are B. D. Cray, of Beaumont, who has been inspecting the harbor with Messrs. J. O. Osgood and A. T. Smith, of New York, and Edward C. Lyon, of Morristown, N. J. Mr. Cray is one of the Kountze Bros.' syndicate, which owns nearly all of the available wharf-front at Sabine Pass, and has been in New York for two months canvassing the situation with Kountze Bros., looking toward the permanent improvement of the port. The party were accompanied by P. H. McCrickett, Kountze Bros.' civil engineer, who has been making surveys of the port for the past six months. Mr. Osgood is also connected with the syndicate, as well as Mr. Smith, who has spent much of his time for the past half-year at the Pass. Mr. Lyon acts as attorney for Kountze Bros. About four months ago the three brothers named, respectively from New York, Omaha and Denver, met at Sabine Pass, and with Messrs. Smith, Cray, Lyon and McCrickett spent two weeks riding over and inspecting their possessions at the Pass on both the Louisiana and Texas shores. They made numerous surveys and maps, as well as estimates of the cost of building wharves and filling up the town-site above the level of high water.

The decision to make improvements and in fact establish a seaport at the Pass seems to have been determined by the results of the dredge work in the channel. It now contains over twenty feet of water at low tide, and twenty-four feet are expected in a few weeks. Among the improvements planned, it is stated, are several miles of wharves, a large grain elevator and warehouses. It is also reported that a line of steamships will be put on between Sabine Pass and New York by C. P. Huntington, representing the Southern Pacific line. This harbor is intended to be the terminus of the Kansas City, Pittsburg & Gulf Railroad, now being constructed from Kansas City.

To Drain Lake Tracy.

In a letter to the MANUFACTURERS' RECORD regarding the draining of Lake Tracy, in Lake county, Fla., Frank A. Storer, of Marietta, Ga., the treasurer of the company, writes that C. P. Williams, of 101 Clark street, Brooklyn, N. Y., is president. The company has acquired about 3000 acres of land bordering on the lake, most of it muck land, now overflowed at high water. There is also a large body of cypress timber. Lake Tracy lies five miles from the St. John's river and ten miles west of the city of De Land. Surveys have shown sufficient fall for easy drainage by a canal three to four miles in length. It is not proposed at present, however, to undertake the work.

A Cold-Air Pipe Line.

The New Orleans city council has given Mr. T. Maille the franchise to manufacture carbon dioxide and to furnish it to residences, stores and other buildings in the city. In other words, New Orleans is to be supplied with a refrigerant which will reduce the temperature during warm weather and keep the air properly cooled. The process generally described is to introduce the gas referred to, which is forced through pipes from the supply station in a manner somewhat similar to illuminating gas.

Making Calcium Carbide.

Mr. J. Turner Morehead sends the MANUFACTURERS' RECORD the following description of the present plant operated by the Willson Aluminum Co. at Spray, N. C., for making calcium carbide, from which acetylene gas is produced. Mr. Morehead is president of the company:

"We have here two dynamos which require 300 horse-power to run them. We are producing calcium carbide by the ton, and making regular sales of it. It requires about 200 horse-power working twenty-four hours to produce one ton of carbide, and this ton of carbide will produce 11 000 cubic feet of acetylene gas of 2.40 candle-power, equal in illuminating capacity to 120,000 cubic feet of the ordinary city gas. Carbide can be produced at a figure which will justify its very extensive introduction. To produce a ton will require water-wheels (steam-power is too expensive) of a capacity of 200 horse-power and a dynamo of 200 electrical horse power, a few copper cables and some large carbons. The appliances for a furnace require little else than a piece of iron about four feet square and a few fire-bricks. The material used is either limestone or slacked or unslacked lime, and any form of carbon, preferably pulverized coke. Negotiations for the sale of different territories are now pending, and when completed manufacturing of carbide will be erected in quite a number of places in the United States."

Creosote Ties for Street Railroads.

The Fernandina Oil & Creosote Works, of Fernandina, Fla., has closed a contract with the Atlanta Consolidated Street Railway Co. to furnish 3000 creosoted crossties for its electric lines in Atlanta. The former company, in a letter to the MANUFACTURERS' RECORD, says:

"The use of creosoted material in the operation of street railway lines is rather a new departure, but there is no doubt that it will prove an excellent investment for the railway companies. Creosoted material must be produced cheaply to be used to any extent for street railways, and we are in a position to furnish crossties and stringers of strong material at a very reasonable price. The kind of pine best adapted for this purpose grows here in abundance. It is not the loblolly pine of Virginia or North Carolina, but a short-leaf, virgin yellow pine, with a very open grain and exceedingly tough fibres, but containing a very large amount of albumen, and consequently of very little use as lumber except subjected to a thorough preserving process. This pine, creosoted well, is practically indestructible, and loses none of the elasticity and toughness of its fibres through the creosoted process."

New England Coming South.

Mr. James W. Tuft, of Boston, has purchased from the Page Lumber Co., of Aberdeen, N. C., 5000 acres of land near Southern Pines. He is having a part of this property laid off for a town-site, and is now getting estimates for building forty to fifty houses. It is understood that Mr. Tuft's plan is to colonize the tract with people from New England, particularly those who on account of tendencies to lung and throat troubles will stand a better chance of long life in the favored Southern Pines climate. It is expected that a large number of these people will engage in fruit culture. The town-site is located on the Aberdeen & West End Railroad, about five miles from Aberdeen.

Extensive Irrigation Scheme.

Mr. J. A. Kemp, of Wichita Falls, Texas, writes the MANUFACTURERS' RECORD that engineers are about to make surveys for a dam across the Wichita river, which will secure a water supply to irrigate the Wichita valley. By the system it is be-

lieved fully 100,000 acres of land can be placed under cultivation. It is thought that the enterprise will require an outlay of \$1,000,000.

Developing Zinc Mines.

The Lyon Hill Zinc Mining Co., of Lyon Hill, Marion county, Arkansas, in a letter to the MANUFACTURERS' RECORD, says:

"We have built a small saw mill to saw lumber for building a crusher to crush eighty to 100 tons of zinc rock per day. We are now sawing a bill of lumber for the Arkansas mining Co. of 40,000 feet for buildings. We intend using our mill to cut lumber for building barges to float our zinc to Batesville, on the White river, where we connect with the Iron Mountain Railroad. This is a new zinc field seventy-five miles from any railroad. There are two roads that contemplate building into our county. Marion county zinc took the gold medal at the World's Fair in Chicago as being the purest. This portion of Northwest Arkansas is known as the red apple and zinc country."

GENERAL NOTES.**Brief Mention of Various Matters of Current Interest.**

H. M. LONG and John Gilbreath & Bros. have shipped this season over 600 cords of tanbark from Guntersville, Ala., to St. Louis and other markets. This represents \$3000 in two months from this firm.

A REPORT from Hot Springs, Ark., states that a rich vein of iron pyrites has been found at that point, and that arrangements are now being made to ship twenty tons for experimental purposes to the Chappell Chemical Co., of Chicago.

THE great soda-ash plant at Saltville, Va., which has been under construction for the last year or two by the Mathieson Alkali Works, is now ready to go into operation. It is estimated that this plant has cost a couple of million dollars or more. It is destined to become one of the most important industrial enterprises of the country.

MR. H. M. MORRISON, of Knoxville, superintendent of the Royal Coal & Coke Co., is reported by the Knoxville Tribune as intending to build 100 coke ovens at Coal Creek, Tenn. In an interview Mr. Morrison is quoted as saying that he will build 100 coke ovens, and expects to have an output of 200 tons per day. The process to be used will, he says, be new and unlike anything in the country at present.

It is reported from Salisbury, N. C., that the Glen Brook Mining Co. has been organized by Mr. R. Eames, Jr., mining engineer, of Salisbury; Dr. Wm. Brandreth, of New York, and Mr. Otto Meares and a Mr. Frank, of Denver, Col. This company is said to have purchased the old Russell mine at Montgomery, N. C., and to have in expectation the construction of a plant to handle low-grade gold ores by the cyanide and other combination processes. It is claimed that this company will attempt to work about 1000 tons of ore daily and that a number of the expert mill and underground men will be brought from Colorado. It is also reported that the same people have purchased the Sam Christian and the Hambley Freehold mines.

ON Monday last 150 members of the American Institute of Electrical Engineers witnessed the first exhibition of the working of the machinery of the Niagara Power Company. The machinery was started and the 5000 horse-power dynamo run to its full speed of 250 revolutions a minute all the afternoon. It was thought best, however, not to run the dynamo with a full load of 5000 horse-power, but upwards of 3000 horse-power was developed, and it was

claimed that the demonstration proved to the satisfaction of all the experts that the full expectations in regard to this great undertaking will be realized. Including the Canadian rights, this company has the privilege of developing its plant to the extent of 450,000 horse-power. This gigantic undertaking has been watched by the electrical people of the world, realizing that, if fully successful, it meant a great advance in the utilization of large water-powers and in the transmission of electricity. Its success will be of special interest to the owners of large Southern powers.

Process for Utilizing Fine Ores.

A considerable percentage of the ores shipped from iron mines and those of richer minerals is so fine that it cannot be manipulated to the best advantage in the furnace. These ores often contain a larger percentage of metal than coarser ores, and mining experts have for some time been endeavoring to find a way by which they could be handled and the ore extracted from them at a profit. The Acme Mineral Nugget Co. claims to have discovered a process that can be used for this purpose, and which will put the ores in such shape that they can be utilized in a satisfactory manner.

This company manufactures compressing machinery which transforms these fine ores into solid nuggets of ore at small expense. The nuggets can be made any size desired, and are ready for smelting immediately after leaving the press. The ore is pressed together with a binder which contains all the elements used in smelting ordinary ores, making the nugget a combination of ore and a high-grade combustible. But a small addition of fuel is required in the operation of smelting. Tests have been made under the required grades of heat, showing that the ore nugget will stand handling, transportation and all the conditions which it is necessary for it to be put through as well as the natural lump. Machinery having a capacity of from five to twenty tons an hour is supplied by the company, and machinery and process are covered by patents issued since February, 1895. The company is now ready to supply the apparatus and binder, and expects to do a profitable business among iron-ore and other mines of the country.

Further information regarding the process can be obtained by addressing the Acme Mineral Nugget Co., 360 Farwell avenue, Milwaukee, Wis.—Iron Trade Review.

New Idea in Levee Building.

The government officials engaged in the improvement of the Mississippi river have been for some time using a suction dredge, by which the river bottom is cut out and forced through pipes several hundred feet to the side of the channel. The idea of using this system to build and strengthen levees along the river has been put into practice, and, it is reported, with much success. Capt. George M. Derby, of New Orleans, has been conducting the experiments at Nine Mile Point. He used a sort of plank framework, and into it was forced the mud and water thrown through the pipes by the dredge. The water ran out through openings left in the plank work for the purpose, leaving the solid material on the embankment. The total cost per cubic yard of a levee built by this system to a height of ten feet will be 39 cents per yard. In making this estimate the figures are approximate and theoretical, but represent in some degree what a difference Captain Derby's work will make in levee building. Hitherto the price of levee work has ranged from ten to twelve and one-half cents on an average per cubic yard.

THE interest maturing July 1 on \$13,500,000 3 per cent. bonds and \$500,000 each 6 and 5 per cent. bonds of the State of Tennessee will be paid at the banking-house of Latham, Alexander & Co., New York, or by the treasurer of the State at Nashville.

FINANCIAL NEWS.**Richmond Bonds.**

The Maryland Trust Co., of Baltimore, has purchased an issue of \$350,000 of Richmond (Va.) bonds and is now offering them for sale. These are 34-year, 4 per cent., registered, refunding bonds, and have been issued for the redemption of outstanding 5 per cent. bonds, which have been called in for payment. Of the general business and industrial progress of Richmond and of the high financial credit which it enjoys it is needless to speak. It is one of the solid, substantial cities of the South, and even during the war and all the troubles existing at that time it never defaulted upon any of its obligations, either in principal or interest. Under such circumstances commendation is almost unnecessary.

Carolina Bonds in Demand

The progress and prosperity of the manufacturing districts of the South are indicated by recent sales of bonds issued by the city and county of Greenville, S. C., which is one of the cotton-manufacturing centres. The county offered \$25,000 in 20-year 6 per cent. bonds, for which there were thirteen bidders representing Northern and Southern concerns. N. W. Harris & Co., of New York and Chicago, paid 106 1/7 for the entire issue. The city issued \$8500 of 20-year 5 per cents., which sold at a rate equal to 107 for 6 per cents.

New Corporations.

Arrangements are being made to open a bank at Smithland, Ky., with \$15,000 capital, to be known as Ironsides Bank.

New Securities.

Buncombe county, N. C., has sold \$98,000 in 5 per cent. refunding bonds. The corporation of Pulaski City, Va., will issue \$25,000 in 6 per cent. 25 year bonds, payable in gold. George M. Holstein, chairman of the finance committee, advertises the bonds in another column.

Interest and Dividends.

The Germania Bank of Savannah has declared a \$3 per share dividend. The Augusta & Savannah Railway Co. has declared a dividend of \$3 per share. The New Orleans Gas Co. has declared a semi annual dividend of \$4 per share. The Greenville (S. C.) Fertilizer Co. has declared an annual dividend of 8 per cent. The Savannah (Ga.) Banking & Trust Co. has declared a semi-annual dividend of \$3 per share. The Petersburg (Va.) Savings & Insurance Co. has declared a dividend of 3 1/2 per cent. to its stockholders. The Baltimore Warehouse Co. has declared a semi-annual dividend of 3 per cent., payable to stockholders on and after July 1.

At the annual meeting of the directors of the Miners and Merchants' Bank of Charleston, S. C., the following officers were re-elected for the ensuing year: Arthur Lynah, president; C. A. Chisolm, vice-president; William H. Warley, cashier; E. S. Vaux, teller; J. Bachman Chisolm, solicitor. A dividend of \$3.50 per share was declared.

Financial Notes.

THE city of Richmond, Va., will redeem \$175,000 in 5 per cent. bonds issued in 1894.

THE National Bank of Wilmington, N. C., which began business June 21, 1894, has accumulated \$5000 surplus during its first year's business.

THE Fidelity & Deposit Co. of Baltimore has decided to extend its business into Tennessee, and has complied with the necessary legal requirements. The Fidelity is now operating over an extensive territory.

RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department, on page 348.]

The Southern Railroad Reaching Out.

The Southern Railway Co. is pursuing a policy of acquiring other lines in the South, which is beginning to attract general attention and cause much comment. When the reorganization of the old Richmond & Danville was effected, but a year ago, it was supposed that the mileage controlled by that operation would not be much increased, and that the Central of Georgia system, when placed on another financial basis, would be operated separately, but on harmonious lines with it.

Later developments, however, show that the Southern is endeavoring to bring about a much larger combination than was supposed, and the indications are that it is planning to control as large a share as possible of the transportation facilities of most of the Southern States. A few figures will illustrate this. The Southern proper, including the reorganized portions of the Richmond & Danville, the East Tennessee, Virginia & Georgia and the Louisville Southern, comprises 4334 miles. In addition to this, however, the Southern has acquired control of the following:

Alabama Great Southern, Chattanooga, Tenn., to Meridian, Miss.	338½
Chattanooga Union.	42½
Georgia Southern & Florida, Macon to Palatka.	285
Atlanta & Florida, Fort Valley to Atlanta.	105

Other lines which, it is claimed, the Southern is negotiating either to have in very close traffic alliance or to control are:

New Orleans & Northeastern, Meridian to New Orleans.	196
Florida Central & Peninsular, Columbia, S. C., to Tampa, Fla., and branches.	935
Atlantic Coast Line, Richmond to Charleston, S. C., and branches.	1340
Harriman Coal & Iron.	30
Central of Georgia.	2620

This gives the Southern a total mileage of 5105 miles acquired and 5121 as possibly in prospect by traffic arrangements and control, or over 10,000 miles in all. If it consummates all these schemes, it will largely control the Florida tourist traffic from the North by way of Washington, shutting off the Plant system at Charleston. It will have its own seaboard terminals at Hampton Roads, Wilmington, Charleston, Savannah, Fernandina, Jacksonville, Tampa, Brunswick, West Point and New Orleans, being shut out only from the ports of Mobile and Pensacola east of the Mississippi river. North of Florida and east of the Mississippi river, the Seaboard Air Line, the Norfolk & Western, Illinois Central, Louisville & Nashville, Mobile & Ohio, Flagler and Plant systems and Chesapeake & Ohio would be the important railroads not under its control. In Virginia, the Carolinas, Georgia, Tennessee and Alabama it would control a large proportion of the freight and passenger business.

There is no danger, however, of the Southern, if it should so desire, ever entirely controlling the South's railroad business. There are too many roads beyond its control, and too many could be built for it ever to secure a monopoly. The fear that some have expressed, that the Southern would become all-powerful, and thus dominate the business interests of the South, is without foundation. It can never do this, even for a short time, without so overloading itself as to bring about a disintegration.

To Extend the Flagler System.

A report from Palm Beach, Fla., confirms the announcement made in the MANUFACTURERS' RECORD several weeks ago that the Flagler system (Jacksonville, St. Augustine & Indian River) would probably be extended to Biscayne bay. The railroad is now completed from Jacksonville to West Palm Beach, 299½ miles.

The extension will give the road a terminus at the most southern point to which a railroad can be built on the Florida mainland. It will be about sixty-five miles long, and General Manager Parrott is quoted as saying work is to begin on it this year.

Rates on Fruit and Truck.

The rates being made by transportation companies on fruit and vegetables shipped North have called forth considerable criticism from farmers and fruit-growers, and an association of the latter is to be formed at Atlanta for mutual interest and protection. Recently the Southern Railway and Steamship Association issued an order relative to shipping peaches in carload lots, which the shippers claim amounted practically to an advance in rates of 20 per cent. This order, however, has been revoked, as the peach-growers protested so vigorously against it. The claim is made that such advances as this and other increases in freight charges will have the effect of deterring fruit-growers from extending their business. While it is unreasonable to expect transportation companies to carry fruit at a loss, it is to be hoped that these advances in rates are not actuated by a desire to secure the lion's share of the growers' profits, which will this year be very large, owing to the extensive yield and the prices received. The development and increase of fruit-culture and truck-raising generally depend much on the attitude of the railroads. If the Southern Railway and Steamship Association should advance rates to an unreasonable figure it would check the business to a great extent and deter many who now think of engaging in fruit-growing from entering into it. The result is that the railroad companies will lose just so much business. On the other hand, every additional fruit or vegetable farm means more revenue to them, and it pays to encourage these occupations by pursuing a liberal policy, and not making rates that take all the profit.

Supplying Coal to Southern Lines.

The coal mines at Egypt, N. C., are furnishing steam coal to the Seaboard Air Line and Cape Fear & Yadkin Valley companies. It is understood also that an extension of the Raleigh & Western may be built to connect with the Southern system. The Raleigh & Western furnishes the outlet from the mines to market. In a letter to the MANUFACTURERS' RECORD President Henszey, of the Raleigh & Western, who is also interested in the mines, writes as follows:

"How soon the new railroad connection will be effected is as yet an open question, as the entire output of the mines named is consumed between the motive-power requirements of the Seaboard Air Line, Cape Fear & Yadkin Valley Railway and commercial trade on those lines. As, however, the production is being rapidly increased, and new and important bodies of coal have recently been opened, it is likely that the tributary territory will draw the greater part of its supply from these mines, and this company will promote the distribution by branches wherever necessary. The superior qualities of the coal are now well established and the permanent success of the enterprise assured."

Working for a Railroad.

A dispatch from Huntington, W. Va., says:

"The counties of Cabell and Wyoming yesterday voted almost unanimously to issue \$100,000 in bonds to assist New York capitalists in building a railroad up Guyan river. Boone, Lincoln and Logan counties will vote soon whether or not they shall issue \$50,000 each to assist in the work."

The Guyan-river district is said by Major Jed. Hotchkiss, than whom there is no better authority, to be one of the richest

coal and timber regions of America, only needing railroad facilities to bring about active development and a large increase in population and wealth. Gen. W. G. Dacey, of 40 Wall street, New York, is interested in the organization of a company to build a road through that district, and if the counties that have not yet voted on the matter vote in favor of aid to the road and the large property-owners join in the enterprise, this line will be built. If constructed, it will hold the key to a great treasure-house of wealth and open up a country not now touched by any railroad. Its own position will be an exceedingly strong one.

An Important Electric Line.

Arrangements have been made to connect the city of Spartanburg, S. C., with several mill villages in its vicinity by an electric line. Within a few miles of the city are the towns of Glendale, Clifton, Whitney and Pacolet, each one containing cotton factories. About a year ago a correspondent of the MANUFACTURERS' RECORD called attention to the opportunity presented for building such a line. This article aroused outside interest, and a company has been formed, which includes Mr. George S. Tenney, a New York contractor, and Mr. A. T. Leftwich, of Baltimore. The MANUFACTURERS' RECORD is informed that \$300,000 worth of bonds have been placed, which insures the construction. The company will control the gas and electric light plant of the city, and add 300 horse-power to it. The road will be at first ten miles long, to be increased later by branches. It will be equipped with fifty-horse-power motors, and carry freight as well as passengers. Mr. Tenney advises the MANUFACTURERS' RECORD that work is to begin in a few weeks.

A New Electric Road.

A director of the Canton, Sparrow's Point & North Point Railway Co. informs the MANUFACTURERS' RECORD that it is intended to complete the road as soon as possible. Work has begun at Canton under supervision of Sanford & Brooks, of Baltimore, contractors for the surface work. A steel viaduct about 1500 feet long will be erected over the Northern Central Railway tracks at Canton. The ironwork and rails will be supplied by the Maryland Steel Co., which is now getting out the material. The total length of the line, which will be equipped with the trolley system, is to be eight and a-half miles. The company is considering the advisability of erecting its own power station. If one is built, it will need a steam plant and electric dynamos capable of supplying 1000 horse-power at a minimum estimate. The company includes Messrs. F. W. Wood, of the Maryland Steel Co.; Joseph R. Foard, of the Joseph R. Foard Transportation Co., and W. B. Brooks, Jr., of Sanford & Brooks, among its directors. Baltimore capital is building the road.

To Complete the Road.

Mr. J. J. Collier, of Philadelphia, secretary of the Ohio River & Charleston, advises the MANUFACTURERS' RECORD that the company will consider an issue of \$3,000,000 in securities to complete the road, which would connect it with the Cincinnati, Portsmouth & Virginia, at a meeting to be held June 27. A Cincinnati dispatch states that President Hunt, of the company, has met with success in enlisting interest in the project in Boston and Philadelphia.

B. & O. Earnings Increasing.

The monthly statement of the Baltimore & Ohio for May shows an increase in net earnings of \$124,570, or nearly 7 per cent. of the gross earnings. Messrs. Alexander Shaw and William T. Dixon were added to the finance committee in place of James Sloan, Jr., and George A. Von Lingen,

who have resigned. Mr. Shaw has been elected chairman.

Union Depot at Atlanta.

A dispatch from Atlanta states that several large transfers of property recently made to Mr. H. M. Atkinson, of that city, were for the site of a large union depot which the Southern and other railway companies intend building.

Railroad Notes.

C. B. CLARK has been appointed road-master of the Texas Midland line.

OMAR BARTLETTE has been appointed general freight agent in New Orleans for the Louisville & Nashville system.

THE West Virginia Central & Pittsburg Company has ordered two 72-ton locomotives for freight and passenger business.

THE Missouri, Kansas & Texas is building five locomotives at its own shops in addition to those ordered from locomotive works.

THE board of directors of the Lynchburg & Durham division of the Norfolk & Western have elected W. C. Houston, Jr., of Philadelphia, president; P. J. Otey, vice-president, and A. J. Hemphill, secretary.

THE Richmond Locomotive Works has received an order from the Augusta Southern Company for locomotives, and is also bidding on a proposition to construct eighteen locomotives for railways in Chili.

A FREIGHT and transportation bureau has been organized at Mobile, Ala., with J. B. Davis as president, and A. J. Quina, secretary and treasurer. The directory of the bureau is made up of members of the directories of the three commercial bodies in the city.

THE steamer Newport News, recently built by the Newport News Shipbuilding & Dry-Dock Co. for the Norfolk & Washington Steamboat Co., has been placed in commission. It is one of the finest and fastest boats ever built in this country, having already indicated a speed of nearly twenty-two miles per hour.

THE extensive shops of the Southern Railway Co. at Knoxville, Tenn., are nearly completed and will be operated about July 15. They are built in the most substantial manner, equipped with the most modern and powerful machinery, and form one of the most complete railway-repair plants in this country.

A Valuable Waterway.

The report of Lieutenant Fletcher, commanding the torpedo boat Cushing, which recently went through the inland waterway from Newport, R. I., to Jacksonville, Fla., shows how valuable is this watercourse for naval as well as commercial purposes. The Cushing's run from Norfolk to Jacksonville, Fla., was made entirely through the inland waterway, excepting 200 miles between Cape Lookout and Charleston, where it was necessary to run outside. Lieutenant Fletcher contends that it would be practically impossible to hold a fleet of torpedo boats in a port on the Southern coast without a blockading force equal to that of the largest of navies, while a little dredging would greatly reduce the length of the route, which, in many cases, would thus be made available for deeper-draught vessels.

A 1500-Barrel Refinery.

The stockholders of the Baltimore Sugar Refining Co. have decided to issue \$650,000 of preferred stock to be taken by the present stockholders for the purpose of rebuilding the refinery at Curtis Bay, destroyed by fire a year or two ago. The new plant will be much larger than the other and will have a capacity of 1500 barrels per day. W. W. Spence, of Baltimore, is president of the company.

SOUTHERN TEXTILE INTERESTS.

[A complete record of new textile enterprises in the South will be found in the Construction Department, on pages 347 and 348.]

COTTON MACHINERY.

Improvements on Old Cards.

Editor Manufacturers' Record:

In a recent paper on cotton machinery in Southern mills the writer incidentally mentioned the Foss & Pevey under-flat card that has been run for several years in the mills of the South. This card for coarse numbers of yarn has been a success from the fact that it took the place of double carding, as well as less floor space, and at a minimum cost in production. On the original top-flat card there were twenty tops, while on the Foss & Pevey there was placed thirty-four top-flats, or 70 per cent. more carding surface. This was a strong factor in the line of improvement, and of an increase in production. On the old 36x36 inch top-flat card forty-five pounds of carded cotton was considered about all that the carding surface could carry and make good work. Now, with the Foss & Pevey under-flat card, it was estimated that the production could be increased 45 per cent.; that is to say, when the original top-flat card turned off a product of forty-five pounds, the Foss & Pevey was started at forty-five pounds, and has been made in some mills to produce from seventy-five to eighty pounds.

For a good many years the manufacturers of cotton fabrics have gone on in the even tenor of their way. Competition twenty-five years ago did not affect to any very great extent the profit of the manufacturer, but during the past ten years competition all along the line has been assuming an aggressive position. It is very evident that the manufacturer who does not keep pace with the improvements now taking place will suffer the consequences.

The demand both North and South for a better grade of goods is an outgrowth of the competition that has gradually forced manufacturers to produce a more excellent grade of goods. This will require on the part of the manufacturer an outlay for improvements on his old machinery in order to be able to compete in any degree with new mills that are equipped with all the latest-improved machinery.

This I think will bring us to the point under discussion. Will it pay the Southern cotton manufacturer to improve the Foss & Pevey card, and if so, how shall it be done?

When the Foss & Pevey card was first placed on the market, and for a series of years afterwards, the card cylinders were clothed with sheet clothing set with iron wire. Later on a mild-tempered steel was used, called Bessemer steel. This was a slight improvement over the original iron wire, and had a successful run for several years. The foundations for card wire were varied in their component parts. Sometimes rubber was used, with a slight background of cotton or linen cloth; then again a double-cover cloth, with wool centre, was used; but these foundations were never a success. Of course, the first cost was quite an item to the manufacturer, especially where the cost of cloth sheets could be placed on a card cylinder at a cost of about \$1 per square foot, while the best grades of leather cost \$1.40 per square foot.

Some fifteen years since the English and German manufacturers of card wire began to import hardened and tempered cast-steel wire. This grade of card wire was not a success at first on account of the unevenness in the process of tempering. Soft and hard spots were found running clear through a coil of wire. A persistent effort on the part of the English and German manufacturer eventually overcame this difficulty to a certain extent, so that more than 90 per cent. of the card wire now set

to clothing is hardened and tempered cast steel.

The American manufacturer of cotton fabrics has quite persistently held to sheet clothing, while the English manufacturer has put on fillets. As this subject will come up for discussion in another paper, I will devote a short space to the improvements that may be applied to the Foss & Pevey under-flat card, and thus enhance the quality of work, as well as increase the product.

As previously stated, the number of tops on Foss & Pevey under-flat card was thirty-four. That gave thirty-four points of carding to the cotton fibres. This was a strong factor in the introduction of this system of carding. Now the point that will be presented is the feasibility of adding a still greater carding surface. When I speak of carding surfaces, I mean more particularly the points of carding on tops that comes in contact with the carding surfaces on the main cylinder. This is the whole secret of good carding.

Let us suppose that a card is started with a superior carding on main cylinder and only five top-flats for separating the short fibres, neps, seeds, etc.; we should not have to look very far to see the cause of rough and uneven carding. Well, suppose that we add five more top-flats to the surface; we should find that such a procedure would improve the quality of carding. Now, then, if we keep adding top-flats till such time as the card is completely covered, we should find the carding constantly improving.

This, I claim, is the secret of good carding. The greater the carding surface that is applied to any card in the form of tops, the finer and cleaner will the carding be. The main point in any cotton mill is a large production of cloth with a small per cent. of seconds. This can only be secured from a strong even thread of yarn, and that calls for a fine grade of carded cotton.

Now, this was the claim for the Foss & Pevey card—the more carding surface applied, the larger and better production secured; thus, for instance, the under-flats increased the carding surface from twenty points up to thirty-four points.

In order to bring the carding to a more perfect condition, Mr. John F. Foss, the inventor of the under flat card, has perfected and brought out an improvement on the carding surfaces of the top flats; this consists of the tripartite system. Having demonstrated beyond a doubt that a large carding surface on top-flats is essential for the production of strong even yarn, it is very evident that this improved system is a move in the right direction, from the fact that the tripartite system of card clothing on the top-flats doubles the amount of carding points; that is to say, if a card has a setting of thirty-four points, by applying the tripartite system sixty-eight points of carding surface are secured.

This is obtained by means of setting and grinding the wire, and in order to get an idea of this system, I will give the dimensions of one sheet of top clothing, which is now being manufactured by English and American card firms: Top, thirty-five and a-half inches; length of wire, 3 16 inch; back margin, 11-16 inch wire, 3-16 inch space, 11-16 inch wire and 11 16 inch margin. This wire, by a patent system of grinding, is relished down in the centre, thus forming two points of setting on the carding surface of the cylinder.

Now, as has been discussed, if a top flat card with twenty tops will do fairly good carding at fifty pounds per day, we are safe in assuming that a card with thirty-four tops will do just as good work at eighty

pounds per day. Now then, if this supposition is correct, is it not perfectly safe in saying that a card having the tripartite clothing, thus giving a carding surface of sixty-eight points, will do equally as good work at 105 pounds per day. Such a result would give to the Southern manufacturer 20 per cent. more good carding at a small outlay, while the yarn spun, so far as its general appearance and breaking strength are concerned, would be of a superior grade.

The writer during the past year has given careful attention to improvements on the Foss & Pevey under flat cards. These cards were formerly set up and clothed with the Bessemer soft steel wire, set to leather-sheet clothing, and had been running about fourteen years. Sixty pounds of carded cotton was all the cards turned off per day. During the past year these cards have been thoroughly overhauled. The old clothing has been removed, cylinders replugged and cylinders and doffers ground true, after which they were clothed with card fillets. This was a superior grade of card clothing, manufactured by Saml. Law & Sons, Checkheaton, Halifax, England. Six-ply C C cotton and linen was used for a foundation, while the card wire used was the cold-rolled, double convex, hardened and tempered cast-steel wire, No. 36x32. Special mention will be made of this grade of card clothing when I treat the subject of revolving flat-cards, carding surfaces, etc. I used the tripartite system of card clothing for tops. After the clothing was relished and drawn to the tops, I placed them in contact with a steel-wire brush driven at a high rate of speed. This was for the purpose of burnishing the points of card-teeth. This process of burnishing wire on tops removes all rough spills and wire edge and is a marked improvement, as the points of card-teeth are left in prime condition to card cotton fibres. The main cylinders that had been run at a speed of 130 revolutions were speeded up to 170 revolutions per minute. The amount of carding after these improvements were applied was increased to 105 pounds for ten hours per day, and proved to be a very fine production.

The cleaner the carding of cotton fibres can be had the more strength imparted to the yarns, thus enhancing the value, also the value of the cloth woven. This result I claim can be secured in no better way than with a large carding surface on top-flats. When we stop to consider that the carding surfaces of the top-flats are for the purpose of gathering out the leaf-shell neps and short fibres, it can at once be seen how essential it is that extremely careful attention be given to this part of the card, as well as to secure a correct principle of carding.

A 5000-Spindle Mill.

Dr. J. H. Yount and Horace Yount, of Iredell, N. C., and Yount & Strum, of Newton, N. C., have organized the Riverside Cotton Mill with a capital of \$50,000. A site has been selected at Island Ford, N. C., where a 5000-spindle mill will be installed and a fine water power developed for furnishing power.

Textile Notes.

THE Fairmont Yarn Mill, of Spartanburg, S. C., will put in 200 looms at an early date.

COL. W. A. POST and others, of Grantville, Ga., will endeavor to organize a cotton-mill company.

It is proposed to organize a cotton-mill company at Lavonia, Ga., and over \$25,000 has been subscribed.

MR. W. RAKER, of Blue Wing, N. C., writes that he and associates will build a \$125,000 cotton mill.

PRINCETON FACTORY, near Athens, Ga., has been put in operation by Capt. Jas.

White, who lately purchased the plant at public sale.

THE J. M. Odell Manufacturing Co., of Bynum, N. C., is placing \$15,000 worth of additional machinery in its mill.

MR. O. A. ROBBINS'S cord and rope plant at Charlotte, N. C., is complete, and will be operated at once with twenty-five hands.

THE stockholders of the proposed mill at Belton, Texas, have elected J. Q. Allen, president; S. M. Ray, treasurer, and Lee Peyton, secretary.

THE Langley (S. C.) Manufacturing Co. has increased its capital stock from \$600,000 to \$700,000 to build the additional mill noted last week.

THE Golden Belt Knitting Mill, at Durham, N. C., will shortly be put in operation, as the machinery has been purchased and the building is now being prepared.

THE Erwin Cotton Mills Co., of Durham, N. C., will double its present capacity of 11,000 spindles and 360 looms. A new building will be erected to accommodate the machinery.

THE Concord Manufacturing Co., of Concord, N. C., will increase its capital stock from \$126,000 to \$189,000 in order to build the new mill noted last week. Work will be commenced at once.

MR. C. F. FOWLER and J. F. McLane, of Little Rock; Geo. P. Penn, J. S. O'Neal and W. H. Phillips have incorporated the Ouichita Cotton Mills, of Arkadelphia, Ark., with a capital stock of \$250,000.

THE Marlboro Manufacturing Co. has been incorporated by A. T. Manship, H. H. Newton, S. B. and B. D. Moore to build a mill at Factory Mills, near Alice, S. C.; capital stock placed at \$40,000.

THE Norris Cotton Mill, of Central, S. C., has elected the following directors: T. L. Connor, D. K. Norris (president), S. M. Norris, J. H. Doscher, J. F. Lay, J. P. Smith (secretary) and W. U. Clayton.

THE new Edna Cotton Mills Co., of Reidsville, N. C., has elected W. S. Forbes, of Richmond, Va., president; L. W. Sanders, of Charlotte, N. C., vice-president, and J. H. Motley, Jr., late of Richmond, mill superintendent.

A CHARTER has been granted to the Colleton Cotton Mills, of Walterboro, S. C., to erect a plant. The following directors have been chosen: A. C. Shaffer, J. R. Stokes, A. Wichman, J. M. Klein, C. A. Savage and others.

THE Minneola Manufacturing Co., Gibsonville, N. C., has just added to its plant a new engine and boiler, sixty four Crompton looms and a lot of spinning and quilling machinery; will also install at once electric lights and automatic sprinklers.

THE building for the Buffalo Cotton Mill (J. M. & W. R. Odell, owners,) is now being erected, and it is 100x74 feet, two stories high, and will have a dyehouse. Thirty-one hundred spindles will be put in, and are expected to be in operation by October 1.

THE Arkansas Manufacturing Co., Arkadelphia, Ark., has been incorporated with a capital stock of \$300,000 for the purpose of manufacturing cotton goods, etc. Incorporators: J. S. O'Neal, J. L. McLane, Chas. F. Fowler, of Little Rock; James Coates and others.

THE Orion Knitting Mill's directors met at Kinston, N. C., last week and declared a dividend of 6 per cent. on the common stock, with 10 per cent. additional on the first series of common stock, payable October next. A committee was appointed to consider the purchase of some new machinery, and Dr. Tull, president, and J. F. Taylor, secretary-treasurer, were re-elected.

THE Eufaula (Ala.) Cotton Mills has declared a dividend, semi-annual, of 5 per cent., payable on the first day of July. At

the same time the board passed 2½ per cent. to surplus account and \$1000 to undivided profits. This makes a total of \$28,375 to surplus account and \$5635 to undivided profits. The figures for the first six months of 1895 disclose a gross earning on \$150,000 of \$12,250.

ORGANIZATION has been perfected of a \$200,000 stock company to erect the 12,000-spindle mill noted last week to be located on the Roanoke Rapids water-power, near Weldon, N. C., and Mr. W. S. Parker, of Henderson, N. C., has been elected president.

REFERRING to the \$100,000 cotton mill noted last week, Mr. J. L. Crowell, of Concord, N. C., writes the MANUFACTURERS' RECORD that he is, with associates, organizing a company to build it; capital \$65,000 and privilege of increasing to \$500,000. The charter will be filed at once, and the majority of the stock has been taken by North Carolina capital. The company has at its chosen site, at Yaddin Falls, on the Yaddin river, fifteen feet head water, 372 acres land, three-quarters mile water front; located four miles from the Southern Railway.

West Virginia Smokeless Coal.

One of the peculiarities of the Pocahontas-region coal is its comparative freedom from smoke. This has added greatly to its strong position in commanding trade, an illustration of this being reported in the Buffalo (N. Y.) News of recent date. The News states that the two large passenger steamers "North Land" and "Northwest" have recently tried anthracite coal in order to avoid the dirt and smoke of ordinary steam coal so objectionable to passengers, but that, after a full test, in which great difficulty was experienced in cleaning fires, Pocahontas coal has been adopted. This was found to obviate the dirt and smoke, and to have the best steam qualities. These general facts are known to most readers of the MANUFACTURERS' RECORD. They have often been published, and hence are not new, but they serve to emphasize the value of the great Pocahontas vein of coal. Only a small part of that territory has been opened up yet, and as new railroads penetrate that region there will doubtless come about a much more rapid increase in coal-mining than has taken place on the Norfolk & Western. That road opened up a part of this territory, and has thus created a world-wide reputation for this coal. Others will soon come in and secure all the benefits of this reputation and immediately jump into a great coal traffic.

THE make-up of the MANUFACTURERS' RECORD is always most excellent, and the scope of its influence is as widespread as is its desire to minister to the wants of those whom it serves. Its eye is watchful all the time. No opportunity is ever lost to bring into greater prominence some particular industry that just at the time needs its timely help, yet no particularizing is ever allowed to interfere with or in the least degree injure the multiplicity of industrial ventures trusting to it for a generous support. The issue of May 31 last was a case in point. The intention was to make a special cotton-mill edition, and the attempt was a surprise for all who have any interest whatever in the development of that industry to the south of us. The issue contained 124 pages, full to the brim each, and treated this special line as it had never been seen before. Maps and illustrations abounded, aiding wonderfully in the comprehension of the text. From almost every conceivable standpoint the subject received treatment, all the articles logically arranged and exceedingly well written. Notwithstanding this special work, the general table of contents was as full and varied as ever. A wise management indeed.—Herald, Piedmont, W. Va.

COTTONSEED OIL.

This department is open for the full and free discussion of trade topics and practical questions, and contributions are invited from men who are identified with this industry. Items of news are always acceptable.

Cotton-Oil-Mill Construction.

[Paper read at the meeting of the Oil Mill Superintendents' Association at Temple, Texas, by Mr. George Parkhouse, of Yoakum, Texas.]

In the construction of a cottonseed-oil mill there are several important questions to be carefully considered. These include the capacity of the plant, the location and railroad facilities. Allowance must be made for space for increasing the size of the plant also, for it has been the experience of fully three-quarters of the mill-owners that they have had to increase within a comparatively short time after the plant has been put in operation. The next question is permanent water supply, which is very essential. There are mills in Texas today that have had to utilize tank cars at great expense in order to secure enough water. Upon the construction of the press-room machinery depends somewhat the size and shape of a mill building, and when the builder reaches that point he realizes the value of a practical superintendent who is able to select only the best apparatus, and not be deceived by the representations of this or that machinery agent.

As may be imagined, the kind of building and the manner of its construction are two essential features, and right here is where more mistakes are made than in any other part of this enterprise. Some of the Southern mills today are paying from 7½ to 8 per cent. in insurance premiums on account of improper construction when they ought not to pay over 1½ or 2 per cent. Mill buildings should be built of brick or stone, with dead walls between the boiler-room and mill, or, better still, with a detached boiler-room. In case a separate millroom is built it should be enclosed by a brick wall, either dead or with but one opening, and that provided with an automatic closing door made of wood and covered with tin; in fact, all openings should be provided with metal-covered doors, and in place of joists heavy floor-beams should be put in, on which should be laid three-inch ship-sapped flooring, and on this should be placed one-and-one-quarter-inch flooring. The lint pressroom should also be of brick, and high enough to form a tower for a water tank of at least 5000 gallons capacity. For proper protection from fire mill buildings should be at least forty feet from any wooden structure and equipped with two-and-one-half-inch fire-hydrants and automatic sprinklers throughout. Fully 5 per cent. insurance premiums may be saved by this mode of protection. By the use of steel beams and columns filled in with hollow tile what is practically a fire-proof building is secured. The writer believes the day is not far distant when this class of buildings will be used almost entirely for the larger oil-mill plants, since the price of metal is so much cheaper for building purposes than a few years ago.

As may be imagined, the setting of the machinery and the employment of proper men are indispensable factors in maintaining an oil mill. Competent mechanics should be employed to install every portion of the apparatus, and no one should think of employing an amateur for this work. Secure good men for every portion of the construction, and place all machinery on good foundations, for the life of any machine depends largely on the manner in which it is installed. In the setting of boilers and equipment of boiler-room the greatest care should be taken. The great heat and the length of time that oil-mill furnaces are kept in operation makes it necessary that the best boiler walls and

furnaces should be used. Two sources of water supply should be arranged for the boiler, one of which should be a pump. The engineer should also use a feed-water heater and purifier. The question of the benefit from a steam dome has been discussed for the purpose of holding steam in reserve. It is our opinion, however, that where only one boiler is used, it should have a dome, and where more than one is used, a steam drum should be provided, connected to the boiler in such a manner that the expansion and contraction will take care of itself. The steam pipes and joints should be carefully put together to provide against leaks of any kind, and only the best material used, for leaks increase the fuel accounts to a great extent. Cover the steam pipes with a good non conductor, so as to produce condensation and retain the units of heat. In this way the pressure will all be retained. All mill superintendents have the proper covering at hand at a merely nominal cost, if they will but avail themselves of it.

As to seedhouses, we believe thoroughly in the house, and not in seedsheds. In placing a seedhouse the builder should consider the nature of the ground as to resistance, also estimate the load per square foot to be put in it; then he will know the amount of surface the foundation will have to cover to sustain the load. After making sure of the foundation, estimate the pressure to be applied to the sides and ends, and use only timber capable of resisting the strain. This can also be easily figured out. The strength of the sides and ends is very essential, as is also a good roof. The oil-storage tanks should be of a capacity sufficient to hold thirty days' run, and the mill-owner should have at least four in number. While large tanks cost less per barrel of contents than small ones, our opinion is that oil settles more quickly in small tanks, which leads us to believe that the small tank will give the best results. The hullhouse is a necessary adjunct to the modern oil mill and should be large enough to hold from six weeks' to two months' supply, in order to reserve a supply for stock feed. The house may be lighter than the seedhouse, but it should have a good roof and be of such dimensions that a wagon may be driven under it and turned around with ease.

In regard to belting, buy only the best. There are several kinds of material used, and one needs to exercise the greatest care in this respect. A good rule is to visit other plants before buying belting and note the quality which is giving the best satisfaction, which is generally the safest to put in.

The Market for Cottonseed Products.

NEW YORK, June 25.

The cottonseed-oil market is in a most unsettled, and, therefore, unsatisfactory condition, values and general trading having simultaneously receded since date of previous report. Exporters are indifferent to purchasing supplies at current quotations, and the fact is apparent that a resumption to normal business may only be attained by further concessions on the part of holders. Heavy holders in all parts of the South decline offers below current valuations, and in not a few instances propositions on the latter basis are not entertained, improved trade developments awaited preferably. The continuous arrivals, together with the slow demand, have increased stocks at this market, thus adding further complexity to the situation, other phases presenting a similarly uninviting aspect. There has been no enquiry for prime summer yellow, while a moderate demand obtains for good off-grade summer yellow at 26 cents bid. Stocks abroad, as well as in the chief domestic consuming centres, are yet abnormally large, owing to the curtailed consumption of compound lard and butterine, while competitive prod-

ucts have to a very material extent supplanted cotton oil in the manufacture of special soap grades. Latest advices from England report a drop in the English-made oil. During the first five months of the present year 10,275 barrels of English oil were exported to Rotterdam, while 67,700 barrels arrived at the same port from the United States during the same period. As it is the evident intention of holders of quantities of crude to hurriedly transform same into refined oil for better keeping rather than sell on a weak market, it is expected the proportion of off-grade yellow oil will be largely increased. The quality of recent arrivals warrant this assumption. Red oil is on offer at 25¼ cents, while crude at the mills is held at 17 to 18 cents. There is no prime barrelled crude at this market. Butter oil is difficult of sale, while white oil is quoted nominally at 30 cents, with few reported sales. No important export consignment is reported for the week just closed, the largest being 250 barrels of prime summer yellow for Genoa. Current quotations are as follows: Prime summer crude, 30 to 31 cents; butter oil, 27 to 28 cents; prime summer yellow, 26½ to 27 cents; off summer yellow, 26 to 26¼ cents; off crude, barrelled, 21 to 22 cents, and soap stock, 1 to 1½ cents per pound.

Cake and Meal.—Latest cable despatches from England announce that, owing to cessation of arrivals of American decorticated cotton cake, values have advanced. Prime cake is quoted at £5 7s. 6d. exquay London, while a consignment of 500 bags at auction on the Liverpool market was withdrawn at £5 5s. Exports approximating 750 tons is reported for the week. A consignment of 915 bags cake from Fernandina has arrived here for local consumption. Domestic quotations are unchanged. It is reported from Tennessee that several mills are yet running, to work off the heavy seed supplies purchased early in the year. Reports from various oil and cake-manufacturing districts indicate light stocks of the latter.

Cottonseed-Oil Notes.

THE stockholders of the St. Mathews Cottonseed Oil Co., at St. Mathews, S. C., have declared a dividend of 20 per cent.

WORK has commenced on the building of the International Cottonseed Oil Co.'s plant at Selma, Ala. The mill proper will be 200x40 feet, while the seedhouse and storage house will each be 200x100 feet. The plant will also be equipped with a complete fire apparatus affording every means of protection from fire. An electric-light plant and patent conveyors will connect all the buildings, so that the handling of cottonseed cake and hulls will be reduced to a minimum.

THE exports of cottonseed products from New Orleans for the week ending June 20 were as follows: One hundred tons cottonseed oilcake and 100 tons and 2240 bags of meal for Liverpool, 1120 bags meal for London, 2500 barrels of oil for Liverpool and 1000 barrels for London. The market for cottonseed products is steady, with receivers' prices as follows: Cottonseed, \$6 per ton of 2000 pounds delivered here; cottonseed meal, jobbing at depot \$17.25 to \$17.50 per short ton of 2000 pounds; for export per long ton of 2240 f. o. b., \$18.75 to \$19 for current month; oilcake (for export), \$18.75 to \$19 per long ton f. o. b.; crude cottonseed oil (at wholesale or for shipment), strictly prime crude in barrels per gallon, 22 cents; loose per gallon, 18½ to 19½ cents; refined cottonseed oil, prime in barrels per gallon at wholesale or for shipment, 24 to 25 cents; cottonseed hulls delivered per 100 pounds, according to location of mill, 20 to 25 cents; foots, 1 to 1½ cents; linters—A, 3 to 3½ cents; B, 2¾ to 2½ cents; C, 2 to 2½ cents, according to style and staple.

As usual at this period of the season, everything about the lumber market is generally quiet in this section. Farmers are all engaged with their crops, and all improvements and betterments are postponed until later on, when it is expected there will be a good demand from this source. The week under review shows very little change in general conditions, and the demand from dealers is light. There is a good supply of sawing orders, and prices are generally well maintained throughout the list. In shingles the demand is moderate, and shipments have been light, with no change in prices. The Beaumont Journal, in its review of the lumber market, says: "Those lumbermen who are manifesting some impatience at the delayed improvement in their business, when every other line of trade has advanced to a better condition, should remember that the lumber trade is the last to feel the influence of other market changes. The demand for and price of lumber, as a general thing, continue good long after other commodities have been depressed, and it is to be expected, therefore, that being the last to feel the effects of a panic, the lumber trade is reasonably among the last to recover therefrom. * * * The time for a revival of building improvements and railway construction is believed to be near at hand, but until its arrival manufacturers should not expect much nor resort to any violent methods to obtain more than a fair share of the general demand." Water shipments of lumber and timber during the present month have been quite active. Among the clearances reported is the schooner Senator Sullivan for Tampico with 613,000 feet of lumber, loaded by the Reliance and the Consolidated Export companies. The Reliance Lumber Co. cleared the steamer Sunniva for Jamaica with 350,000 feet. The

schooner James Slater, whose cargo is also furnished by the Reliance, will clear on the 25th with 240,000 feet. The Consolidated Export Co. is now loading a cargo of 800,000 feet, taken by the schooner Sophia Kirk, and the Scotia is taking on a cargo of 400,000 feet, furnished by the same company. The Litcher & Moore Lumber Co., of Orange, has just finished loading the schooner Annie E. Kranz for Philadelphia with about 600,000 feet. The total shipments reported are over 3,000,000 feet, and embrace lumber, timber, ties and yard stock.

Lumber Notes.

MR. WALTER E. FLEMING, of Clarksburg, W. Va., has been appointed receiver for the C. S. Fewsmith Lumber Co., of Parkersburg, W. Va.

THE Ferguson Lumber Co., one of the big yellow-pine concerns of Arkansas, with mills at Little Rock, has decided to go into the retail lumber business in that city.

THE Empire Lumber Mills at Empire, Ga., are now running on full time for the first time since they went into the hands of a receiver, between two and three years ago.

At a regular meeting of the stockholders of the West Huntsville Furniture Co., held in Huntsville, Ala., last week, it was voted to increase the capital stock from \$25,000 to \$50,000.

THE Ensign Lumber Co., of Cordele, Ga., is said to have purchased out the Hart Lumber Co., of Fenn, Ga., and will start the mill running about the 1st of July. The company is making many improvements, and, when completed, will have a fine plant.

It is stated that the contract between the North Augusta Land Co., of Augusta, Ga., and the proposed box factory has been signed. The factory will soon be located in the building formerly occupied by the Pine Fibre Co. It will receive its first carload of machinery this week.

THE receipts of lumber at the port of New Orleans for the week ending June 21, as reported by the secretary of the Mechanics, Dealers and Lumbermen's Exchange, were 1,987,000 feet, and since September 1 they amount to 67,657,000 feet, against 62,028,812 feet for the corresponding period last year.

THE Richmond Woodworking Co., of Richmond, Va., has purchased a piece of property on the Richmond & Petersburg Railroad beyond Johnson's iron foundry, and will begin at once the erection of a plant for the manufacture of wood boxes, trays, etc. The company will employ about seventy-five men.

THE saw mill of the Woodworth Lumber Co., at Monroe, La., worth \$10,000, was totally destroyed by fire on the 18th inst. The insurance amounted to \$15,000. The Woodworth Lumber Co., Incorporated, has a paid-up capital of \$100,000, and the mill destroyed was well equipped. The company will rebuild immediately, and can fill a good portion of their accepted orders out of the large stock of lumber on hand.

MESSRS. J. J. OLIVER, of Baird, Miss., and R. E. Dodds & Bros., of Holly Ridge, Miss., have consolidated under the name of the Sunflower Lumber Co. The officers of the company are E. B. Wade, president; G. G. Wade, vice-president, and S. L. Dodds, secretary and treasurer. The capital stock of the company is \$50,000. The company is operating a large hardwood mill at Moorehead, Miss., and cutting about 25,000 feet a day. A large cypress mill will soon be erected.

THE clearances of lumber and timber from Jacksonville, Fla., during the week ending the 22d inst. were as follows: Steamship Algonquin with 300,000 feet and 2000 bundles of shingles, and the steamship Cherokee with 250,000 feet of lumber, both for New York. The British

schooner Maid of the Mist cleared for the Dutch West Indies with a cargo of 379,000 feet of yellow-pine lumber and 18,000 cypress shingles. The schooner Sarah D. J. Lawson was loading lumber on the 20th inst. for Philadelphia. The shipments during July are expected to be very heavy. The demand for lumber has increased, with values firmer.

Iron Markets.

CINCINNATI, June 22.

The upward trend of the iron market continues, and apparently without any retarding influences worth noticing. Agricultural-implement makers in the central West complain of cancellation of orders, mainly because of the drouth through Ohio, Indiana and Illinois. In some other lines also disappointment is expressed, but it is perhaps more because high expectations have not been realized than that there has been no improvement. The man with pessimistic views, and those who pronounce the present activity merely temporary, to be followed by another slump, are not hard to find, but the facts are working dead against them.

Reviewing the salient points that the week has developed, one of them is the disappearance of accumulated stocks of iron that were pressing on the market, and of small, weak sellers. One lot of 30,000 tons of foundry iron at a Northern furnace that has depressed prices in its district is reported to have all been taken. One Southern furnace that has been taking contracts considerably below the market is reported to have filled its books uncomfortably full of orders. Even the large stocks of charcoal iron, that have so competed against each other as to drive prices out of sight, have been largely taken up, and the holders have discovered how foolish they have been to part with valuable property at less than cost. Charcoal irons are still the weakest spot in the market, but they are daily strengthening.

The statement was made recently by an experienced ironmaker that present consumption in this country is 100,000 tons per month in excess of production. The declaration seemed wild. It now appears, however, that in May the current output of furnaces in the United States was taken, and a little more than 100,000 tons drawn from the limited stocks. Probably the same rate of reduction is going on this month. A very little more of this, and the market will get away from the conservative influences that now control it.

The lot of the furnaceman and his representative, on an advancing market, is not so much one of roses as might be supposed. Old and valued customers who have been placing contracts for five years on a declining market, and who now desire to buy for six or nine months ahead at present prices, on an advancing market, and are refused, feel that the course of the furnaces is arbitrary and unjust. The furnaces, on the other hand, feel that on a declining market they extended deliveries, carried iron for their customers and accommodated in many ways at their cost, and now are entitled to a little of the improvement that is so long overdue. The merchant and commission man enjoy life as best they can between the upper and nether stones.

The principal transactions of the past week have been with two or three large agricultural-implement concerns and with the leading malleable works. The latter have covered for a total of perhaps 25,000 tons. The majority of it is coke iron, but a considerable portion has been of charcoal iron. The rolling mill and general foundry trade have been rather free buyers, and all at the last advance in prices.

Southern irons are now \$1.75 per ton up from the lowest figure on mill grades, and \$1.50 on foundry grades. The last advance of 50 cents per ton was ordered on the 15th inst. The strongest element in the

whole situation appears to be Bessemer pig and its products. Steel billets, even at the outside figure, are hard to obtain.

There has been practically no demand from the car works or from other industries dependent upon the railroad business. The market, such as it is, is practically made without any help from the railroads.

We quote for cash f. o. b. Cincinnati:

Southern coke No. 1 foundry.....	\$11 00@12 00
South. coke No. 2 foundry and No. 1 soft.....	10 50@11 00
Hanging Rock coke No. 1.....	12 00@12 25
Hanging Rock charcoal No. 1.....	15 00@16 00
Tennessee charcoal No. 1.....	13 00@14 50
Jackson county stone coal No. 1.....	14 00@14 50
Southern coke, gray forge.....	10 00@10 50
Southern coke, mottled.....	9 75@10 00
Standard Alabama car-wheel.....	15 00@16 00
Tennessee car-wheel.....	14 50@15 00
Lake Superior car-wheel.....	13 50@14 00

CHICAGO, June 22.

The tone of the market is strong. Sellers of both Northern and Southern irons report their furnaces well supplied with orders and confident of still higher prices in the near future. Demand is good, but buyer and seller have difficulty in coming together on deliveries. Furnaces are firm for early delivery and not disposed to grant concessions along this line.

Jobbing foundries in this locality report rapidly-increasing business and considerably brighter outlook.

L. S. C. C. sellers are stiffening their views as to prices, and an advance is not improbable.

We quote for cash f. o. b. Chicago:

Southern coke No. 1 soft & No. 2 fdy.....	\$11 50@12 75
Southern coke No. 2 soft & No. 3 fdy.....	11 25@11 50
Ohio Scotch softeners No. 1.....	13 00@13 50
Lake Superior charcoal Nos. 1 to 6.....	13 00@13 50

ST. LOUIS, June 22.

Another advance of 50 cents a ton on Southern iron, which was ordered June 15, shows the increasing strength of the market. The present prices of pig iron, including the last advance, are lower than in June, 1893, when there was such a depression in trade, and values of iron products were then considered at low ebb.

Steel rails are reported to have advanced from \$22 to \$24 at Pittsburgh. The demand is entirely normal, and the advance results from reduced stocks and increased confidence in the future.

We quote for cash f. o. b. St. Louis:

Southern coke No. 1.....	\$11 50@12 75
Southern coke No. 2.....	11 00@11 25
Southern coke No. 3.....	10 75@11 00
Southern gray forge.....	10 75@11 00
Southern charcoal No. 1.....	14 50@15 00
Ohio softeners.....	14 00@14 50
Lake Superior car-wheel.....	14 50@15 00
Southern car-wheel.....	16 00@16 50
Genuine Connellsville coke.....	4 75
West Virginia coke.....	4 75

BUFFALO, June 22.

The Eastern field is beginning to catch some of the spirit which has been in evidence in the central West for two or three weeks past, and the market is quite active, with an advancing tendency. Heavy sales by Lake Superior charcoal furnaces have reduced the unsold stock to such an extent that an advance of 50 cents per ton has been made, which is the first advance recorded so far in Lake Superior charcoal iron. It is still very low, however, and if the next week shows as large a demand as the last one, it will undoubtedly be reflected in future prices. The advance really only brings these irons on a plane with Bessemer at most of the competing points, and they still remain the cheapest thing, relatively, in the market.

We quote for cash f. o. b. cars Buffalo:

No. 1 foundry strong coke iron Lake Superior ore.....	\$12 00
No. 2 foundry strong coke iron Lake Superior ore.....	11 50
Ohio strong softener No. 1.....	12 10
Ohio strong softener No. 2.....	11 60
Jackson county silvery No. 1.....	15 25
Lake Superior charcoal.....	13 00
Southern soft No. 1.....	11 75
Southern soft No. 2.....	11 50
Hanging Rock charcoal.....	18 50

BOSTON, June 22.

The pig-iron market continues to strengthen, and hardly a day passes without bringing forth a notice of an advance in value of some brand of iron which we are handling. Within a week we have been informed of an advance of 50 cents per ton on all grades made by the Tennessee Coal, Iron & Railroad Co., and during the last two weeks the Tonawanda Iron & Steel

Co. has advanced on all grades about \$1 per ton.

This state of the market has caused a very heavy buying movement, as consumers feel anxious to get in their orders to cover their future requirements. This month will probably show the heaviest tonnage of sales in New England of any month since we established this office.

We quote for cash delivered Boston:

Alabama No. 1 foundry.....	\$13 00@13 25
Alabama No. 2 fdy. and No. 1 soft.....	12 50@12 75
Alabama No. 3 fdy. and No. 2 soft.....	12 25@12 50
Alabama No. C. C. car-wheel.....	17 50@18 00
Strong L. S. coke iron No. 1 foundry.....	14 50@15 00
Lake Superior charcoal car-wheel.....	16 50@17 00
American-Scotch (Northern) No. 1.....	14 50@15 00
Jackson county silvery No. 1.....	17 00@17 50

NEW YORK, June 22.

The principal interest in iron in New York centres not in the local trade, which is rather dull, but in the general features of the business throughout the country and in the speculative phases of Wall street. Stocks closely connected with successful iron companies like Tennessee Coal, Iron & Railroad Co. have had a remarkable rise, and are attracting more attention on the Stock Exchange than any of the industrials. This reflects the favorable sentiment of the financial world with respect to the iron trade.

We quote for cash f. o. b. New York:

No. 1 standard Southern.....	\$12 75@13 50
No. 2 standard Southern.....	12 00@12 25
No. 1 standard soft.....	12 00@12 25
No. 1 foundry lake ore coke iron.....	13 50@13 75
No. 2 foundry lake ore coke iron.....	12 75@13 00
Lake Superior C. C. W.....	15 00@15 75
Southern C. C. W.....	17 75@18 00

PHILADELPHIA, June 22.

Everything looks promising in the iron market in this quarter. Some large transactions have been recently closed for basic pig for use in open-hearth process in large steel plants in this vicinity. This branch of the steel trade has expanded very largely in Eastern Pennsylvania and the Pittsburgh district since the improvement in iron and steel began. In foundry and forge irons there has been a good demand and no trouble is experienced in securing the additional prices asked by the furnaces.

We quote for cash f. o. b. Philadelphia:

Standard Alabama No. 1 N.....	\$12 75@13 00
Standard Alabama No. 2 N.....	12 00@12 25
Strong lake ore coke iron No. 1 N.....	14 00@14 25
Strong lake ore coke iron No. 2 N.....	13 00@13 25
Lake Superior charcoal.....	15 00@15 50
Standard Alabama C. C. W.....	17 50@18 00

ROGERS, BROWN & CO.

Industrial Improvements at Buena Vista.

Mr. L. W. Powell, of Buena Vista, Va., in a letter to the MANUFACTURERS' RECORD, says:

"The Buena Vista furnace, which is owned by the Virginia Development Co., has been leased by the Rich Patch Iron Co. for three years under royalty. The lessee has taken charge of the property and is now at work making repairs and improvements to the plant. It will put in two more new boilers, making fourteen, and an additional engine. It is expected that within thirty days it will be making from 125 to 150 tons of iron per day. Mr. M. H. Maury will be general manager. The Shanahans, who are large stockholders in the Rich Patch Iron Co., will be prominently identified with the management. There is ample capital back of this deal.

"The putting in blast of this furnace makes four large plants now in operation at Buena Vista. The A. K. Rarig Co. has a large force of hands at work at its machine shops, and is just now engaged in the manufacture of machinery for making and putting down asphalt pavements and streets. The cassimere mills are running on full time and have large orders ahead for the United States government. The Appold tannery is working in full force and greatly prospering. The Columbian Paper Co. is working day and night and doing a highly profitable business. We hope soon to have the glass plant and firebrick works in operation. Everything looks promising for Buena Vista and proves the truth of the 'survival of the fittest.'"

MECHANICAL.

Electricity in Coal-Hauling.

An extensive coal-handling plant operated entirely by electricity has been running in San Francisco for the past few months with the greatest success. The plant is of modern character in every respect, and is said to be the second important coal handling plant operated by electricity installed in this country.

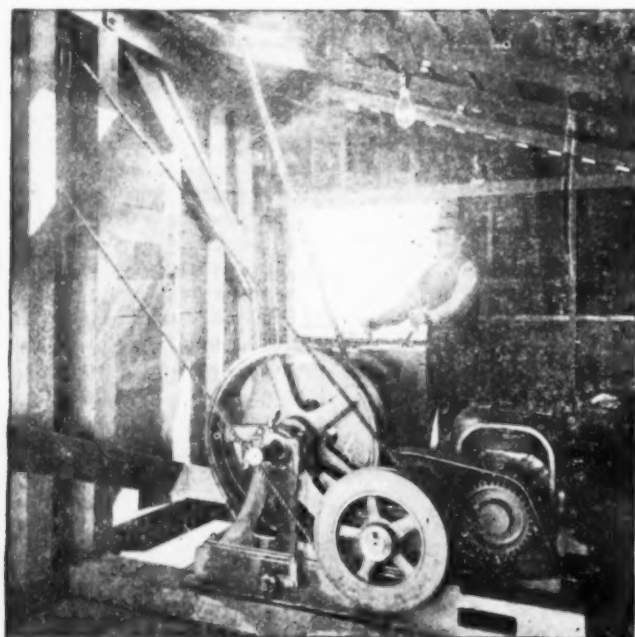


FIG. 1.

The owners, R. Dunsmuir & Sons, being confronted with the problem how to unload coal rapidly from the steamships and colliers at wharves and distribute it to the wholesale and retail trade most economically, found the solution in the adoption of electrical apparatus, and the contract was awarded to the General Electric Co., of New York city.

The San Francisco plant consists of an electric-hoisting and haulage system for unloading the coal-carrying ships and steamers and distributing the coal into wharf and house bunkers for local and wholesale distribution.

The bunkers consist of two parts, the wharf bunkers and the yard or house bunkers. The former are built out upon the pier, by the side of which the colliers are moored for discharging. The yard bunkers are located in the main yard, and are connected with the wharf bunkers by means of a trestle and bridge 204 feet long and thirty five feet above the level of the street. The main yard consists of a dock 350 feet by 300 feet, and here the main bunkers, screening bunkers, power-house, offices, stables and the storage-yard are located. The wharf bunkers are 290 feet long by thirty-six feet in width, and have a capacity of 1100 tons of coal; the yard bunkers are 241 feet long by sixty feet in width, and have a capacity of about 5000 tons.

The power-house is a frame building eighty-one feet long by eighty-eight feet in width. The boiler plant consists of three 66 inch by 16 foot boilers, each of which contains sixty-four four-inch tubes, and is rated at 100 horse-power. In the dynamo-room are two 11x18x14 tandem-compound McEwen high-speed 135 horse-power engines, running at 265 revolutions. Belted to these engines are two 90 kilowatt 250-volt compound-multipolar General Electric dynamos, running at 700 revolutions, and over-compounded 10 per cent. The load on the dynamo is extremely variable, often changing from no load to 75 per cent. of full load in from five to ten seconds, and from full load to no load in about the same time. Even under these exacting conditions the entire generating

plant is giving close regulation and satisfaction.

The hoisting plant consists of three special electric hoists, each having a capacity of 2000 pounds lifted at a maximum rope speed of 800 feet per minute. An excellent idea of these hoists is given in Fig. 1. The motors are of the General Electric L. W. P. twenty type, and the armature-shaft is geared to an intermediate shaft by special gears, with a very slight reduction in speed. The intermediate

shaft is in turn geared to the drum-shaft by means of eight-groove "V" frictions. On the end of the intermediate shaft is also a single groove wheel driving the hauling-in drum, which serves to haul in the bucket over the shutes when it has been raised to the proper height. The hoists are controlled by means of K. R. controllers of the usual well-known type, and are mounted in derrick-houses, as shown in the illustration.

Fig. 2 shows the steam collier "Costa

depth of sixty to eighty feet, according to the state of the tide and the portion of the hold from which they are taken.

The derricks are mounted on a track raised about six feet above the floor of the bunkers, and are so arranged that they can be moved along the wharf to accommodate themselves to the position of the hatches of

a General Electric motor. The locomotive has a draw-bar pull of 800 pounds, and is required to haul from four to six loaded cars, each car weighing 3600 pounds, and having a capacity of 4700 pounds of coal. The train in Fig. 3 represents a gross load of 40,670 pounds. The tracks are perfectly level, and on the return trip the

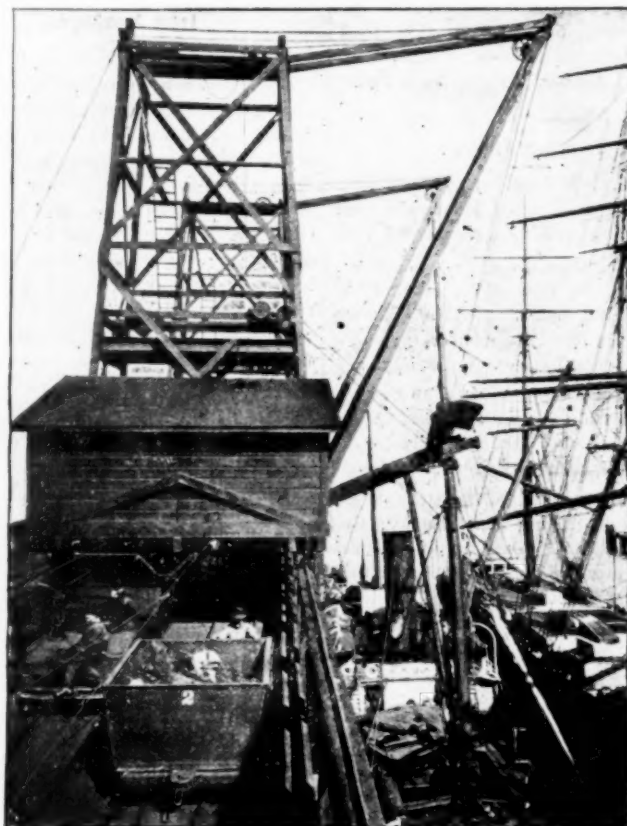


FIG. 2.

the ships. The capacity of each derrick is 400 tons in nine hours, although they have under favorable conditions worked up to 450 tons in nine hours.

A portion of the coal is unloaded directly into the bunkers on the wharf, and is distributed from them into the retailers' wagons. By far the larger portion, how-

ever, locomotive frequently brings back eight to ten empties.

All the coal is weighed before delivered to the house bunkers, track scales being made a portion of the track, and each being weighed independently. Fig. 4 shows the interior of the house bunkers, with locomotive, cars and coal. The capacity of

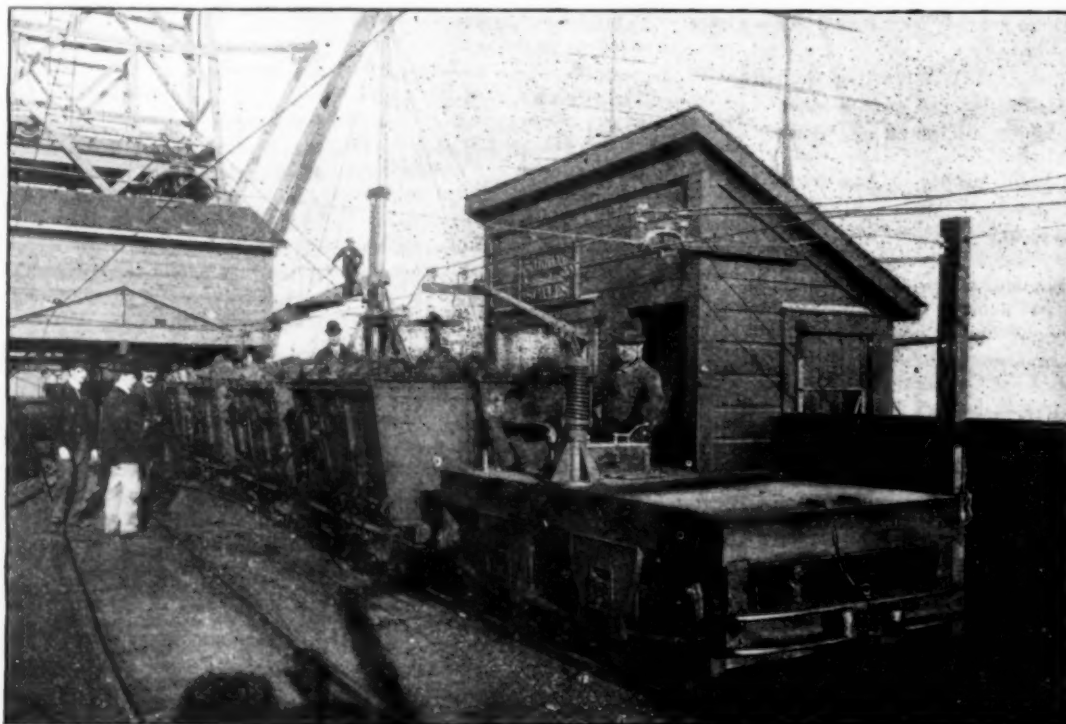


FIG. 3.

Rica" lying alongside of the bunkers, and unloading partly into the cars for distribution into the yard bunkers, and partly off shore into the ship "George Skolfeld" moored beside her. The bucket is just about to be unloaded into the chute by which the coal will pass into the cars. These buckets have a capacity of 1200 pounds of coal each, and are raised from a

ever, is discharged into cars and hauled into the house bunkers to be distributed as needed.

Fig. 3 shows one of the electric locomotives, of which two are used for this haulage work, with a train of four cars being weighed on the scales before delivery to house bunkers. The locomotive is of the T. M. F. type, and is equipped with

these bunkers is about 5000 tons of coal.

On the bridge the usual overhead railway construction has been adopted, while on the wharf a special construction, shown in detail in Fig. 3, was rendered necessary on account of the limited headroom underneath the derrick.

These bunkers handle the output of the Wellington mines, at Wellington, B. C.,

which is estimated at about 450,000 tons per year. Of this about 250,000 tons are handled through these bunkers, the balance being shipped direct to wholesale dealers. The plant has been in continuous operation since the 4th of February, and has given complete satisfaction throughout.

account of the different qualities of lumber acted on, the great difference in the cut that planing machines are called upon to take and the variety of widths of lumber that resawing machines have to saw, has made an automatic or self-adjusting feed one of the most desirable features in the

where the feed is taken direct from the saw or cylinder shaft. It consists of two brackets that work in a groove, either in a cross-arm or on the face of the two subtending arms of the pulley, as shown in cut. These brackets have their faces covered with wood and fit between the face of the pulley

obtained by the use of machines with this device on: The operator has no need whatever to notice his machine after he has entered a board; no matter how twisted or knotty or how heavy the cut may be, the machine will adjust its feed in proportion to the resistance offered by the cut; the work is never stopped on account of an extraordinary heavy cut, as this device reduces the feed, no matter how slow it may be required, to the actual ability of the saw or cutterhead to take the cut. A planer with this device on will, when taking an unusually heavy cut, plane a board actually smoother than it will with the full feed on a board where it is taking a light cut, and on account of the feed being so very much reduced there is no tearing or waving of the board. This device can easily be applied to any resaw, planing machine or saw mill at a very reasonable expense. For further particulars address the manufacturer, Josiah Ross, 1443-1459 Niagara street, Buffalo, N. Y.

A New Column Molder.

It is hardly necessary to speak of the excellence of the molding machinery made by the Rowley & Hermance Co., of Williamsport, Pa. The cut which accompanies this description represents its new seven-inch column molder, which is one of the best of its kind placed on the market. It is built very heavily and in a most substantial manner, the frame being cast of one piece so as to give the greatest strength and solidity, while the boxes are lined with genuine Babbitt metal and journals accurately fitted to them. It has four feed rolls, two above and two below, each four inches in diameter, and all driven by the most powerful system of gearing. The working parts are easily and quickly adjusted from the front or working side of the machine and are not complicated or liable to get out of order. The top arbor is provided with outside bearing which extends

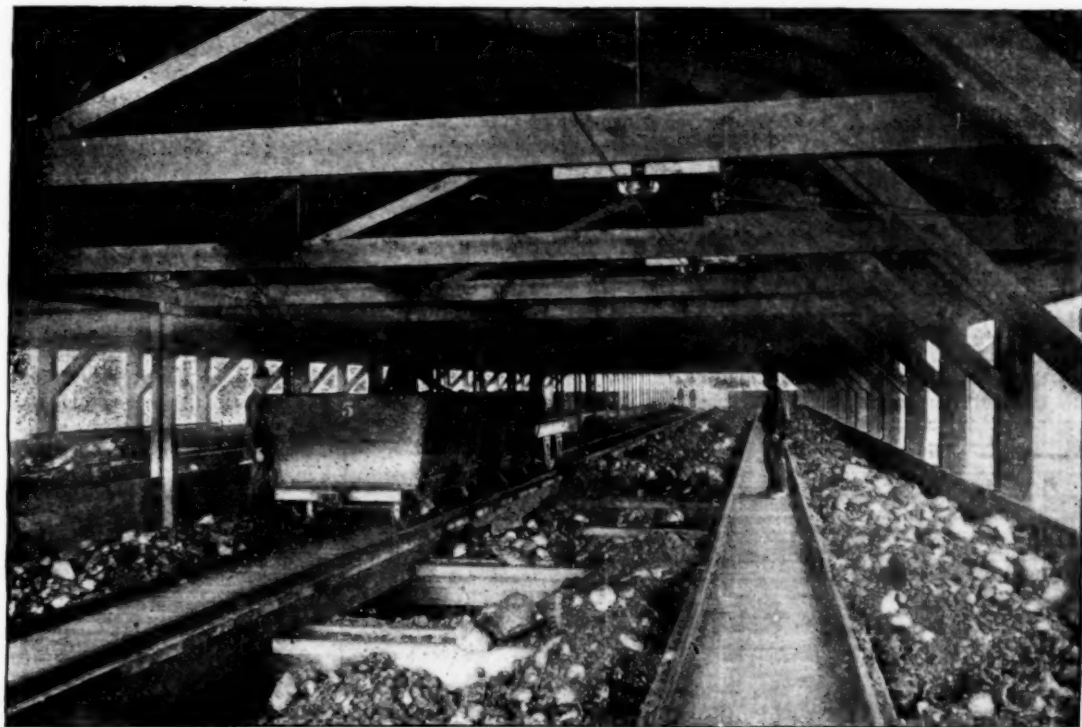


FIG. 4

Ross Self-Adjusting Feed Device.

The accompanying cuts show an important improvement that has long been needed on self-feed woodworking machines. The fact that woodworking machinery is exposed to such a variety of resistances on

construction of all self-feed woodworking machines. Recently this has been accomplished in the most perfect manner, and is illustrated by the accompanying cuts. These show the device as applied to machines where the feed is taken from the countershaft, and also as applied to machines

and the shaft. The revolution of the pulley or of the cross-arm in either case throws these brackets out and presses the wood face firmly against the inside of the pulley, and by the friction thus caused carries the pulley around; thus the feed of the machine is obtained. When the machine is at full speed the pressure is so great as to carry

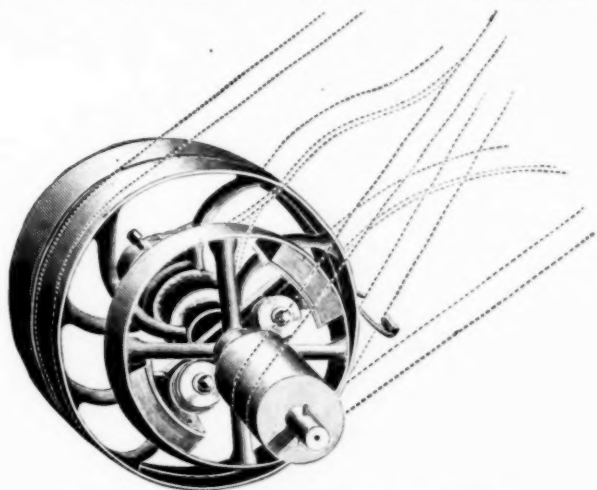


FIG. 1.—THE ROSS SELF-ADJUSTING FEED DEVICE.

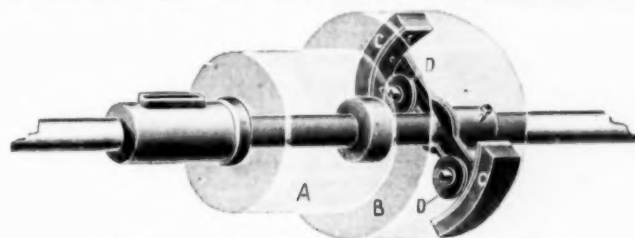
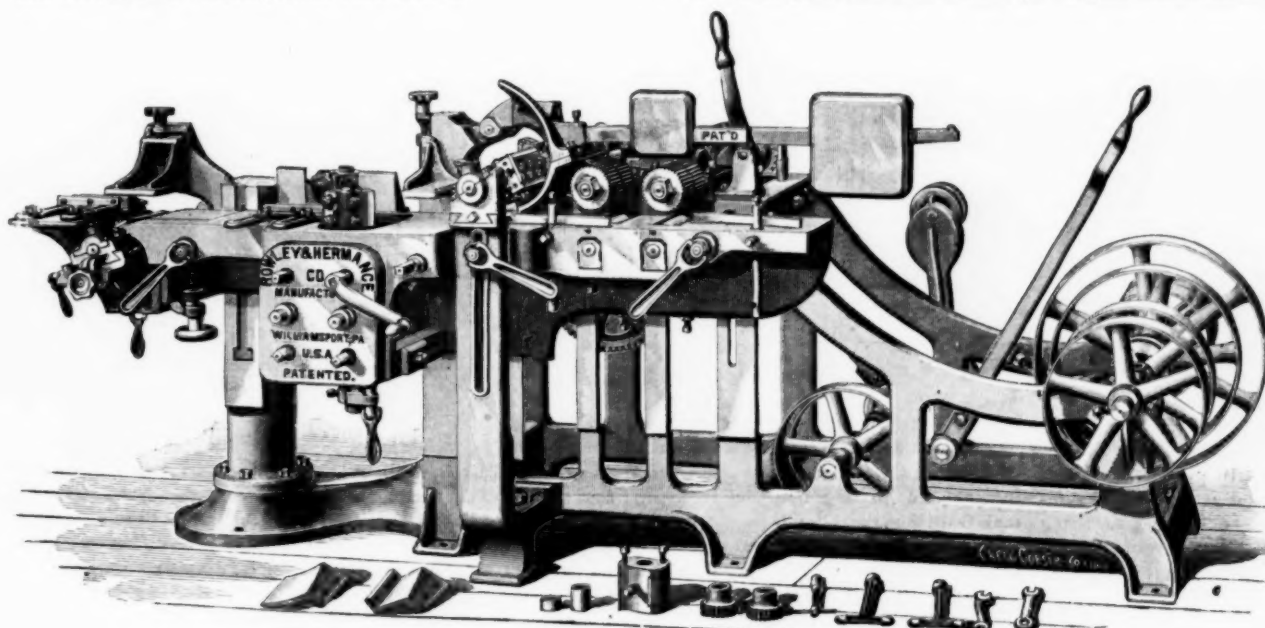


FIG. 2.—THE ROSS SELF-ADJUSTING FEED DEVICE.

the feed firmly and without slip, but so sensitive is this device that when the cylinder or saw is resisted 20 per cent. of its full speed the pressure upon the pulley is reduced so much as to cause an absolute stop of the feed even when the machine is empty.

The following are some of the advantages

to the floor, while the top head has a lateral adjustment, the bottom head having both a lateral and vertical adjustment. The machine is provided with an adjustable tightener to take up the slack from the belt that drives the top head, while both the inside and outside heads have vertical, angular and horizontal adjustments and are



NEW COLUMN SEVEN INCH FOUR-SIDED MOLDER.

raised and lowered with the bed. An important feature is a compensating spring placed under the weight-bar to relieve the chip-breaker from jarring. This prevents friction and holds the breaker firmly upon the material in sawing any kind of lumber. The machine will dress seven inches wide by three and one-half inches thick on four sides, and the table will lower twelve inches.

The Block System of Ice Manufacturing.

The block system is the name by which to distinguish this system from the can and

without a joint in them are placed in the freezing tank at a proper distance apart to suit the thickness of ice to be made (see Figs. 1 and 2). These coils are immersed in the water in the tank which is to be frozen (no brine is used). The pipes are sufficiently near together in the coils, so that as the ice is formed around each one (in the first freezing) it soon joins and makes a continuous cake as in plate ice. This in itself is not new, but in this new combination it becomes valuable, as no device for freezing has yet been invented which equals the economy of the zigzag coil for that purpose. These coils contain, and it

is subdivided from this conduit, so as to have approximately equal quantities pass between every pair of coils in the freezing tank to the opposite side, where there are overflows between each, into conduit G (Fig. 1); from thence the water returns to the receiving tank, thus completing the circuit. These conduits run the whole length of the tank. In this circuit the water is thus repeatedly filtered, maintaining it always at a high state of purity; it also passes through a vacuum in the air-tight filter which removes the surplus air as well as the impurities continually purged out in the process of freezing. By this simple

opens the supply valve, which discharges into the top of cooling tank H (Fig. 2), and this discharges, after cooling the water, from the bottom into the receiving tank. This continues just as long as is needed, and thus the water is automatically supplied.

The ammonia circulation in the block system is much the same as in the direct-expansion plate system. The circuit is preferably limited to the length of a coil, say 200 to 400 feet of one inch to one and a-quarter-inch pipe. The coils are connected to manifolds F F F F (Fig. 2) outside of freezing tank, limited to from three to six coils to one manifold, both top and bottom; that is, outlet and inlet. One expansion valve capable of fine regulation is used to a manifold, and a regulating valve to the inlet of each coil. One gas valve is used to each manifold. These manifolds are usually connected so as to be for one day's harvesting and termed a section. The arrangement thus made enables the attendant to stop off any one or more sections and not interfere with others running.

The key to the block system of freezing is the cutting, which is done by a vertical steam ice-cutter (Fig. 3) of small copper cutting pipes securely fastened to steel plates, which follow in the kerf (about one-quarter of an inch in width) melted in the ice by the hot copper pipes. The kerf is cut close to the coils, extending twenty-two inches alongside, then at right angles, thus extending to the surface of the cake of ice. It is made down to the bottom of the tank, thus releasing a block of ice 22x12x66 inches, or less, weighing about 560 pounds. The time required is five to ten minutes. These steam ice-cutters are made to cut from one to ten blocks at one cut, to suit the size of the plant. The patentee is Lea Pusey, Wilmington, Del.

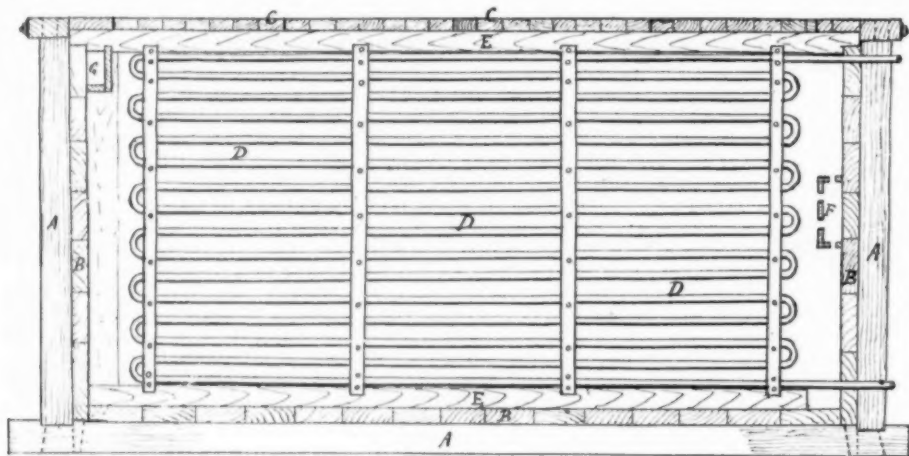


FIG. 1.

plate system. Its principal differences from them are that no can or brine is used, and no plates or heavy hoists. For the block system the ice is frozen like plate ice, in large cakes, and harvested in blocks similar to can ice, but has no core or cone. It is therefore somewhat of a combination of the two, without the objectionable features of either. The accompanying cuts

is through them that the refrigerant is circulated, preferably ammonia. This is expanded from a liquid at a pressure of about 160 pounds to a gas at five to ten pounds; at these low pressures ten to twelve-inch ice is made in five to six days. It is well known that ice thus made in so short a time, without some corrective, will be full of air, and such impurities as are usually

method ice is made in the short time mentioned, which has no superior in purity, transparency, cleavage and storage qualities.

This water circulation maintains the water in the freezing tank at a uniform height while the ice is being harvested

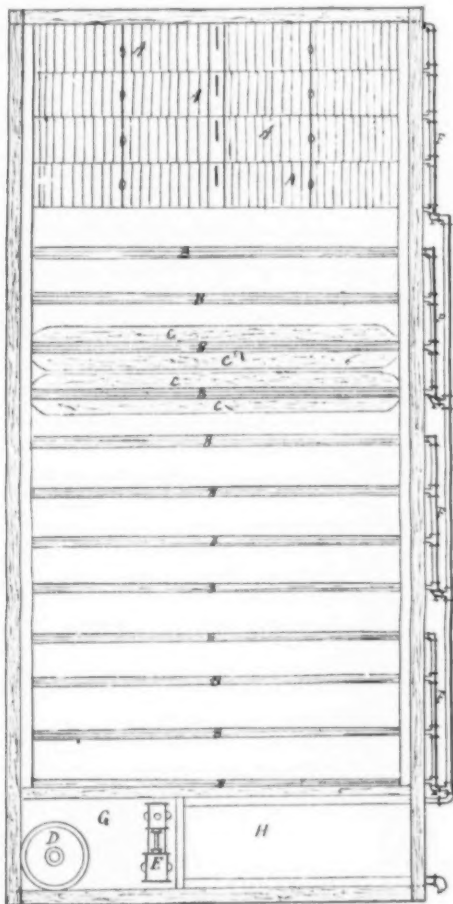


FIG. 2.

illustrate the principal parts of the block system. Fig. 1 represents a cross-section of freezing tank, coil etc.; Fig. 2 represents a top view of the freezing, receiving and cooling tanks; Fig. 3, a vertical steam ice-cutter used for harvesting the ice.

The description and operation of this system, also the character of the product, are as follows: Zigzag coils of pipe made

contained in water. In this system a small stream of the water in process of freezing is circulated, passing from the receiving tank G through the filter D (Fig. 2), which is air-tight, drawn by the section pump E (power pump preferred). The filter and pump may be located at any other convenient place. The pump E discharges into conduit F (Fig. 1). The stream of water

therefrom. This is done by the use of a float and valve connection with the water supply. When the circulating water in the receiving tank G (Fig. 2) lowers in consequence of a reduced overflow from the freezing tank when the ice is being removed therefrom, the float, being in the receiving tank, lowers with the water,

THE Mecklenburg Iron Works, of Charlotte, N. C., have built a gold-extracting plant in that city for the benefit of miners who do not have reducing plants on their own claims. The equipment comprises a five-stamp mill, furnaces and chlorination works, and the whole is in charge of Mr. Tompkins, an experienced gold-miller.

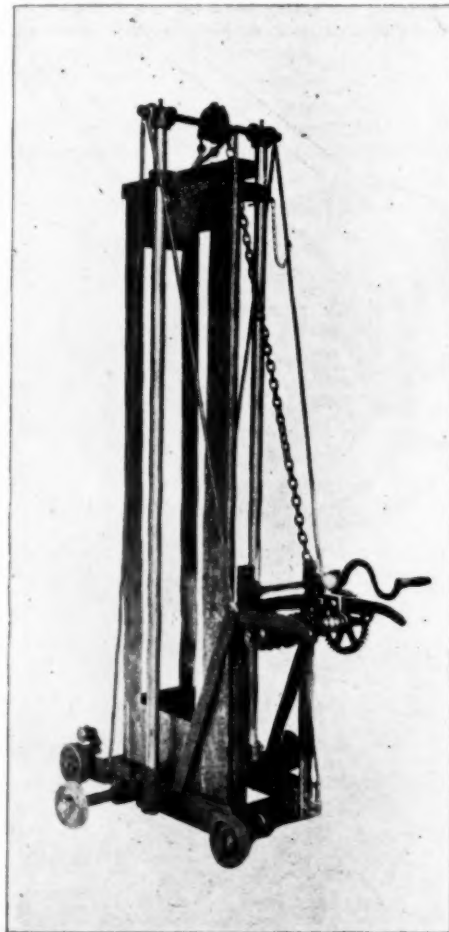


FIG. 3.

A Built Fly-Wheel.

The accompanying cut shows the form of built fly-wheel made by the Philadelphia Engineering Works, Limited, of Philadel-

An Improved Lock.

The accompanying illustrations give the reader a good idea of the Christman combined shutter-lock and bower, placed on

nations of this kind, and is less liable to get out of order than even the plain or common bolt now in use. The bowing arrangement is exceedingly simple and does not in the least interfere with the free

will do fine, close work, and will not clog with chips. They are made in four regular sizes to cut screws from the smallest to one

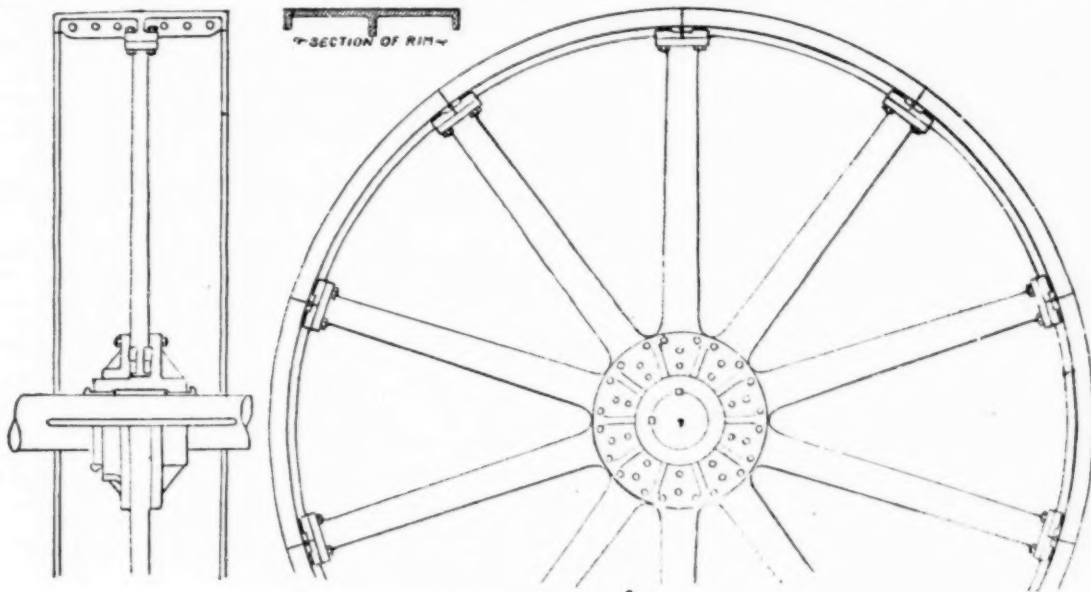


FIG. 1.

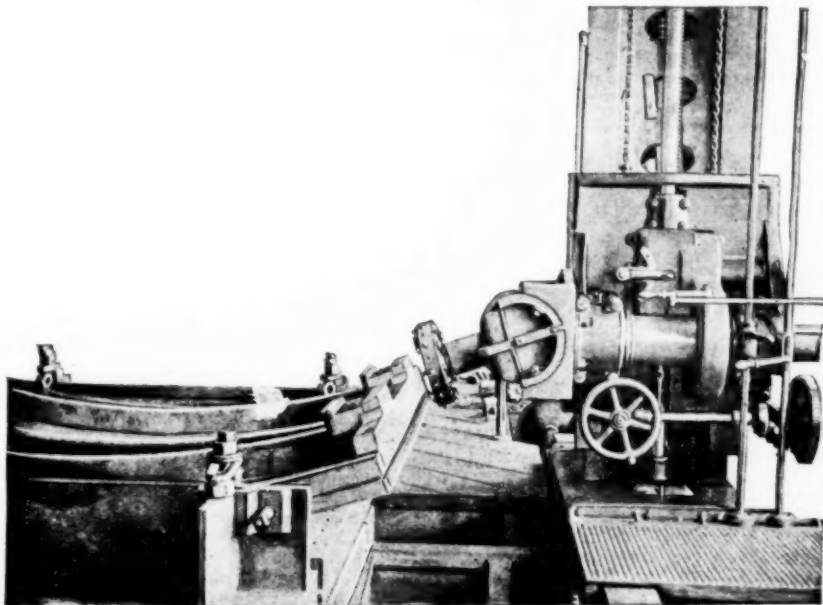


FIG. 2.

phia, Pa., which type is frequently asked for by engineers. It will be observed that though it is of the usual plate centre, it is a distinct modification, having a continuous hub and follower-plate on this hub. This gives a positive grip on the shaft the entire length of the hub, and not, as usual, two distinct grips, and while the extra follower-flange is secured to the hub, it plays no part in the shaft-fit. The arms, having been faced on the end and planed to gage thickness, are secured between the hub-flange and the follower-flange by the centre bolt through a rough hole. The other three holes are bored through the solid and reamed, the bolts being driven through and nutted on each end. The arm segments are faced on a special machine, as shown in the engraving, and accuracy secured. From this machine the wheel can be erected in the pit lathe and have it ready to turn on the first assembling. The segments have a central flange to prevent their bending. It has been definitely ascertained that pulley fly-wheels running at high velocities bend outward between the arms and tend to strain the joint bolts through the flange with a powerful leverage in excess of the strain brought about by centrifugal force. Depth in this central flange decreases the tendency to bend and secures a stronger wheel. The Philadelphia Engineering Works standard wheels are calculated for a speed of 5000 feet per minute, and they give a margin of safety of ten at this speed.

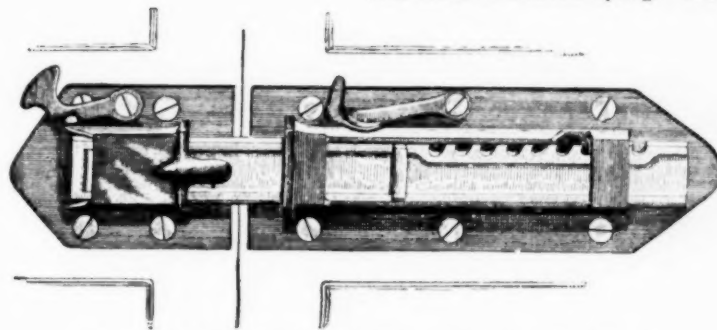


FIG. 1.—THE CHRISTMAN COMBINED SHUTTER LOCK AND BOWER.

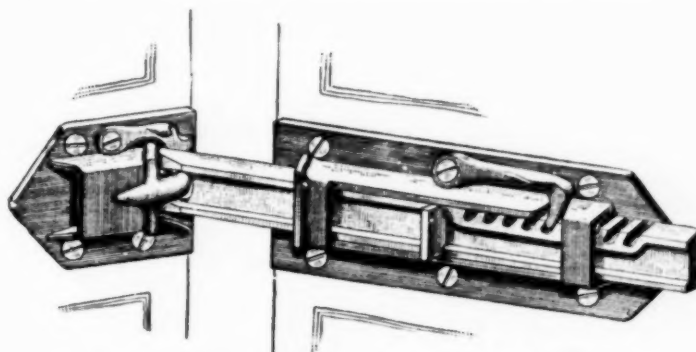


FIG. 2.—THE CHRISTMAN COMBINED SHUTTER LOCK AND BOWER.

the market by the Wrightsville Hardware Co., of Wrightsville, Pa. It is claimed for this invention that it is free from many objectionable features found in other combi-

movement of the lock in the operation of locking or unlocking the shutter, as is the case with many other combinations. The finger-piece is made solid with the bolt and requires no fitting or riveting of the parts after they are galvanized or japanned. By this arrangement every part is fully covered and rust stains are prevented.

The Gardner Die-Head.

We present herewith engravings of a die-head adapted to screw machines and other purposes, made to open automatically at any desired point, and yet so arranged as to hold the dies very firmly when cutting. The special feature by which this solidity is secured consists in placing each die upon a sliding block, which reaches over and has a bearing the full length of the head, the two blocks being placed side by side in the head as indicated. The dies are closed by a taper pin, which is forced into the slides by the lever shown, and when the lever is forced back by a suitably-arranged tappet, the dies open quickly by the action of a helical spring. There are

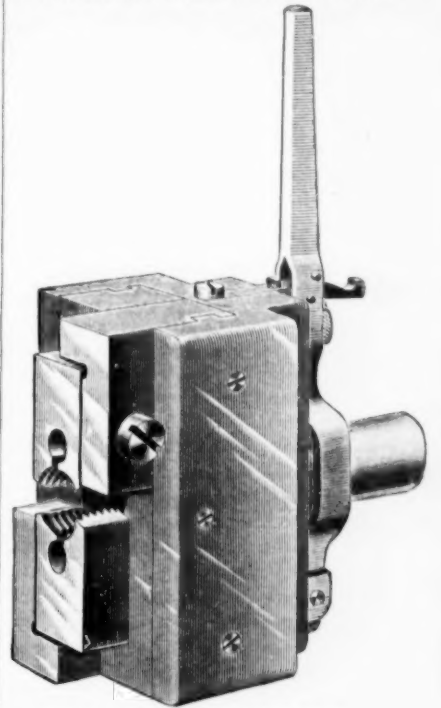


FIG. 1.—THE GARDNER DIE HEAD.

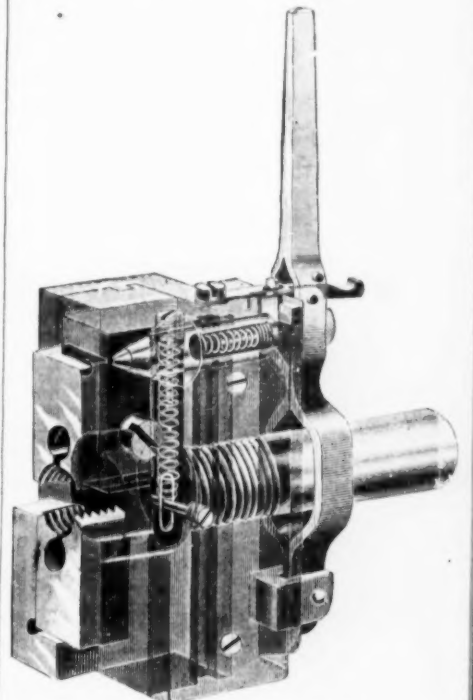


FIG. 2.—THE GARDNER DIE HEAD.

and a-quarter inches diameter. Charles H. Besly & Co., 10 and 12 North Canal street, Chicago, Ill., place them on the market.

Large Coal Contract.

The MANUFACTURERS' RECORD is informed by the Davis Coal & Coke Co. that it has secured the contract for furnishing the New York, West Shore & Buffalo Railroad Co. with 40,000 tons of coal. This will come from the West Virginia mines of the company, and will be shipped by way of Hagerstown and Harrisburg, Pa. The West Shore is one of the Vanderbilt lines, and extends from New York to Buffalo. The order was secured in competition with the Western Pennsylvania companies, which are much nearer the line than the Davis Company. This is a significant indication of the favor with which West Virginia steaming coal is received by Northern consumers.

Southern Brick to Mexico.

The Bessemer Fire Brick Works, Bessemer, Ala., is filling an order of about twenty carloads for Mexico, to be used in the construction of a furnace in that country. The order was secured in competition with a number of fire-brick makers.

comparatively few working parts in the head, and the long bearings of the sliding blocks make them wear well. It is found that the die will cut threads true to size,

PHOSPHATES.

Phosphate Markets.

OFFICE MANUFACTURERS' RECORD,
BALTIMORE, JUNE 27.

The phosphate market has not shown any improvement during the past week, and the demand from manufacturers still continues light. From points of production the advices continue satisfactory, and the outlook fair for a good business during the season. There is more activity among the South Carolina phosphate plants, and both land and river miners are more encouraged with the general outlook for trade. The river-mining companies are pushing the work of development with vigor, and their product is well sold up in European markets several months ahead. In Florida the phosphate market is in fair shape, and while the output at present is light, there is likely to be a renewal of activity in mining as the demand increases. At present shipments from the ports are free, and extensive preparations are in progress to facilitate the loading of vessels in the future. Charters at present are not numerous, but enough is being done to warrant large shipments for July and August. The market continues steady, and for South Carolina rock prices are \$3 to \$3.25 for crude, \$3.50 to \$3.75 for hot-air-dried and \$6.50 for ground rock, all f. o. b. Charleston. Florida is firm at 8½ cents per unit for 70 per cent. land pebble. The local charters reported are schooners S. B. Marts, Ashley river to Baltimore, and Ebenezer Haggett, Ashepoo to Baltimore. New York charters for the week are as follows: A schooner, 585 tons, Port Tampa to New York at \$2.50, loaded and trimmed; a schooner, 799 tons, Coosaw to Elizabethport at \$2. Messrs. J. P. Whitney & Co. report the following charters for Brunswick, Ga., and vicinity: Schooner Star of the Sea, 919 tons, Fernandina to Philadelphia; British steamer Laleham, 1263 tons, Fernandina to United Kingdom; British steamer Sand Hill, 1335 tons, Fernandina to United Kingdom, and British steamer Sylvia, 1166 tons, Fernandina to London and Delfzyl. A charter was taken yesterday in New York of a schooner, 485 tons, from Charleston, S. C., to Newtown creek on private terms.

FERTILIZER INGREDIENTS.

The market for ammoniates has ruled quiet during the week, with few transactions reported. There is some inquiry from Southern buyers, but the market is without snap or vigor, with prices weak. Messrs. Thomas H. White & Co., in their June circular, say: "The month past has been marked by an almost total indisposition on the part of buyers to take any ammoniates, and during the last fortnight, by an extraordinary effort by the larger Western producers to market their surplus stocks of tankage and blood, assisted by the heavy cut in freights, they have realized in some instances the closing f. o. b. prices of last month. Blood has not sold readily. Large sales of 9 to 10 per cent. tankage are reported at \$13.50 to \$15 f. o. b. Chicago and \$11 to \$12 f. o. b. Kansas City, of concentrated tankage at \$1.40 to \$1.45 f. o. b. and blood at \$1.65 to \$1.70 f. o. b. Reports from the fisheries are so far not favorable, and if continued another month will materially affect the situation. The market is weak at the close."

The following table represents the prices current at this date:

Sulphate of ammonia, gas.....	\$2 75@	—
Sulphate of ammonia, bone.....	2 75@	—
Nitrate of soda.....	1 75@	—
Hoof meal.....	1 80@	—
Blood.....	1 95@	2 00
Azotine (beef).....	2 00@	—
Azotine (pork).....	2 00@	—
Tankage (concentrated).....	1 75@	—
Tankage (9 and 20).....	1 65 and 10	—
Tankage (7 and 30).....	17 00@	17 50
Fish (dry).....	20 00@	—
Fish (acid).....	15 00@	—

CHARLESTON, S. C., June 24.

The movement of phosphate rock continues pretty lively. Inquiries are numer-

ous and sales noted for future delivery. There is a much better feeling among the miners for the fall trade, which promises to be pretty stiff. Prices are \$3 crude, \$3.50 to \$3.75 hot-air-dried and \$6.50 ground rock, all f. o. b. Charleston. The coastwise shipments for the week were: E. C. Knowles, 650 tons for Washington; I. T. Campbell, 810 tons for Weymouth; Fannie Reiche, 650 tons for Baltimore; R. S. Derby, 600 tons for Baltimore; O. C. Schmidt, 820 tons for Philadelphia; A. B. Bacon, 520 tons for Philadelphia; A. C. Grace, 650 tons for Baltimore. In port and loading are Mary Curtis, M. J. Lawrence, A. L. Mulford and M. L. Patten. The coastwise shipments since September 1 were 83,094 tons crude rock, against 101,423 tons for same date last year.

Phosphate and Fertilizer Notes.

MR. B. F. HOLLAND, receiver of the Pharr Phosphate Co., is loading 1700 tons of pebble phosphate at Tampa, Fla., to be shipped to Baltimore.

THE stockholders of the Greenville Fertilizer Co., of Greenville, S. C., held their annual meeting in that city last week. The directors declared a dividend of 8 per cent., payable July 1 and January 1.

MR. THOMAS HILL, of Baltimore, has an extensive marl bed near Tolchester, in Kent county, and very valuable as a source of fertilizer supply. Mr. Hill proposes to develop the mine, and will put in the necessary steam fixtures for raising the marl. Drying sheds will be erected and other necessary appliances used to place this fertilizer on the market.

THE clearances of phosphate from Fernandina on the 20th inst. were steamers Gracia for Liverpool via Norfolk with 2900 tons, and Lowlands for Stettin, Germany, with 2300 tons. The coastwise entries were steamer Laleham from Boston to load a cargo of 2200 tons of phosphate for the Anglo-Continental Guano Works. The steamer Allendale arrived on the 20th inst. and will take a cargo of phosphate.

THE mines of the Albion Phosphate Co., near Albion, Fla., have been shut down for some weeks, and it is not known when they will start up again. The Camp Phosphate Co., in Levy county, is running as usual, and the company is now working on its new mine, getting out some very fine rock. The Osceola Phosphate Co., of Levy county, is partially working under the management of Walter Shans, of Bronson, Fla.

A NUMBER of prominent business men residing in Shenandoah and Frederick counties, Va., have entered into a copartnership under the name and style of the Marlboro Fertilizer Co., Limited, with a capital stock of \$20,000, for the purpose of manufacturing fertilizers. Judge E. D. Newman is president of the new company, and Joseph M. Bauserman, secretary and treasurer. Marlboro, Frederick county, is designated as the home office.

THE coastwise shipments of phosphate from Charleston for the week ending June 21 were as follows: Schooner Isaac T. Campbell for Weymouth, Mass., with 810 tons; schooners Fannie Reiche with 650 tons, and Rillie S. Derby with 600 tons, both for Baltimore. The Philadelphia shipments were the Oscar C. Schmidt with 820 tons and the Addie B. Bacon with 520 tons. The total shipments since September 1 amount to 79,604 tons of crude and 1365 tons of ground, against 97,148 tons of crude and 4837 tons of ground for the corresponding period last year.

VICE-CONSUL GREENE, of Antofagasta, Chili, makes the following report to the State Department concerning nitrate shipments to the United States: "Over \$200,000 (American gold) value in nitrate of soda has been shipped during the March quarter to the United States, but, as here-

tofore, mainly for the arts and manufacture, and almost nothing for agriculture. In a report recently asked for by the Secretary of Agriculture, I took occasion to explain that by showing our planters and farmers the advantage found in its use in Europe, and by explaining its economical use, he can build up a great and valuable trade with Chili and Bolivia. Home cargoes of nitrate will give outward cargoes of American goods."

An Opportunity to Invest.

THE city of Spartanburg, S. C., is attracting much attention on account of its development as an industrial centre. Spartanburg county has more cotton spindles than any other county in the South, and the business, both in the town and county, is growing rapidly. The establishment of cotton and other factories is bringing capital and people into the city and increasing its wealth and population. Mr. W. E. Fowler writes the MANUFACTURERS' RECORD that houses are in demand, and that an excellent opportunity is afforded to place capital in safe ventures which will insure 8 and 10 per cent. income. Mr. Fowler conducts an extensive business in real estate and banking, and is in a position to handle investments so as to give the best returns. He makes a specialty not only of real estate, but of factory and water-power sites, and besides is thoroughly conversant with the industrial situation.

A Genuine Pleasure Trip.

THE popularity of Ocean City, Md., as a summer resort is constantly increasing. Nature has provided it with one of the finest bathing beaches in the world, and Sinepuxent bay, which is also adjacent to it, affords a variety of pleasures, such as boating, fishing, etc. The enterprise of the Baltimore, Chesapeake & Atlantic Company, which controls the transportation routes to it, has greatly improved the facilities for reaching the resort from Baltimore and Washington. The tourist can take a steamer at the company's wharf on Light street, Baltimore, and after a delightful sail across the bay to Claiborne can be carried to Ocean City by a fast express train in a few hours. These trains are handsomely appointed and drawn by powerful locomotives. They run directly to the beach, stopping within a few yards of the principal hotels. Another route is from Baltimore to Salisbury, Md., thence by rail—but a few miles—to the beach. This is really a most enjoyable trip, as the boat leaves Baltimore in the evening and all night is spent on the water, the passenger enjoying a refreshing sleep in a comfortable stateroom, and thus avoiding the fatigue incident to all-rail travel. Several hotels are open at Ocean City, affording accommodations for those who desire to spend a day or week or month at the seaside. The Atlantic Hotel, owned by the Sinepuxent Beach Co., has artesian-well water and other conveniences and is excellently managed. It has had the patronage of the best families in Maryland since it was opened.

TRADE NOTES.

AN illustrated catalogue and price list of rubber mats, matting and step-treads has been issued by the Boston Belting Co., of Boston, Mass. The rubber matting described is extensively used in many of the principal hotels, railroad depots, offices, public buildings and billiard halls throughout the United States. It is well adapted for the protection of stairs and carpets indoors, and for the covering of stoops outdoors. It prevents accidents by slipping in winter weather, and for use in places exposed to wet or slush is especially desirable. Perforated rubber mats, which are coming into such general use, are shown; also ornamental door mats, stair and car step-treads.

A NUMBER of drying machines constructed from improved patterns are described and illustrated in a catalogue issued by the Thomas Phillips Co., of Providence, R. I. This company has had a long experience in building drying machinery for every known purpose, and the Phillips ma-

chines have become well known as standards of excellence. The catalogue shows machines for filling and drying opaque stock for curtains and drying silk and other fabrics, also water and starch mangles, open soaping machine, aniline and ageing boxes, color or dye kettles of various designs, cylinder slashers, tape-dressing machines for dressing warps, etc.

LATE contracts received by August Wolf & Co., Chambersburg, Pa., include the following: S. S. Myers, Mercersburg, Pa., a 40 barrel roller system flouring mill; G. H. Dulle Milling Co., of Jefferson City, Mo., through Wolf & Co.'s Kansas City branch office, contract for building a 400-barrel flour mill; Charles Beatley, Southern representative, 40-barrel flour mill for Miller & Sapham, Madison Ohio; J. W. Heck, of Kansas City branch, 75 barrel flour mill for the Brooksville Milling Co., McCune, Kans.; M. N. Hartz, general Atlantic agent, 30-barrel roller-system flour mill for James T. Cline, Strinestown, Pa.; 125-barrel flour mill, Henderson, Suplee & Son, Gulf Mills, Pa.; 30-barrel flour mill, W. P. Sykes.

THE introduction of Remington ice making and refrigerating machinery is progressing at a rate that evidences a wide appreciation of the good points of this machinery. Recent contracts received by the Remington Machine Co., Wilmington, Del., include the following: L. W. Hopkins & Co., butter and produce, Baltimore, Md., three-ton refrigerating plant operated by electric motor; Elbert Manufacturing Co., manufacturer of oxola, Baltimore, Md., three-ton refrigerating plant; Joseph Bancroft & Sons Co., Wilmington, Del., one-ton ice-making plant for Rockford Mills and village; R. G. Nicholson, Chestertown, Md., five-ton ice-making plant to replace factory burned last summer; W. C. Wade, Hartford, Conn., six-ton refrigerating machine to increase present capacity. The company lately shipped a one-ton ice-making plant for export to Venezuela, South America.

Protecting Flour Millers.

SOME months ago the flour mill builders of the United States were invited by Messrs. Sprout, Waldron & Co., of Muncy, Pa., to join with them in forming an association in defense of the millers against patent claims, and more particularly to determine the validity of the Brua patents. Messrs. Sprout, Waldron & Co., in a letter to the MANUFACTURERS' RECORD, say that, failing in their efforts with one exception, they, conjointly with Aug. Wolf & Co., of Chambersburg, Pa., furnished the money necessary to push this suit, which has resulted in a favorable decision recently issued in regard to this matter. Messrs. Sprout, Waldron & Co. sent out a letter saying that they were desirous of securing a sufficient number of manufacturers to form a strong combination determined to oppose the harassing annoyances and expense to which millers are often subjected by unfounded claims upon patents. They proposed that if they fail to form such a combination, to guarantee to every purchaser of any of their machines that they are not an infringement of any patents, and they bind themselves to protect and defend them against all damages or suits that might be brought for infringement, and in addition thereto, to undertake the prosecution with their own attorney and without any cost whatever to the buyers of their machines. A more liberal proposition could hardly be made, and Messrs. Sprout, Waldron & Co. are to be congratulated upon the success of their efforts.

WHEN a fire breaks out in a business building or factory the all-important essential is quick notification of the fire department. There may be, and in many cases are, apparatus and equipment that will extinguish a small blaze, but nevertheless experience has taught that the city fire department, with its extensive resources, should be brought to the scene with promptness, ready to handle a dangerous fire in its incipency. Despite the usual city alarm system, wide awake property-owners find the introduction of an independent system a profitable investment. In this direction inventive skill has supplied a notably complete arrangement. It is called the "Universal" fire-alarm system, and is installed by the Universal Fire-Alarm Co., of 925 Chestnut street, Philadelphia, Pa. The system is especially arranged to give an instant alarm of fire under various conditions of the circuits, some eighty-five in all. As an instance of the marvelous adaptability of the alarm, the fact is cited that a perfect alarm of fire can be and is given with the main outside line broken, grounded and short-circuited, the main inside line broken and short-circuited, and the local or building line broken and short-circuited, or with any combination of any of these difficulties or disarrangements, whether they result from storms, accident or design. Each thermostat is connected by a circuit with a fire-alarm box and annunciator combined, placed in some frequented part of the building. The annunciator, immediately upon the breaking out of a fire, indicates the floor on which the fire is by the ringing of a vibrating bell to notify the occupants that there is a fire on the premises, and at the same time gives notice to the nearest fire station or the municipal fire headquarters of the fire, exactly locating the threatened building at once by number and street.

CONSTRUCTION DEPARTMENT.

THE MANUFACTURERS' RECORD seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under the head of "Machinery Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ALABAMA.

Anniston—Furnaces.—The Woodstock Iron Co. intends to repair one or possibly two of its furnaces and then put same in blast.

Avondale—Packing-house.—It is reported that a Kansas City (Mo.) concern will build a \$150,000 packery to employ 150 men at Avondale. Property for site is said to have been purchased from W. H. Morris.

Birmingham—Packing-house.—Phillips & Ungerman are erecting a packing-house at North Birmingham.

Birmingham—Furnace.—The Sloss Iron & Steel Co. will remodel and rebuild No. 1 furnace and put it in blast.

Birmingham—Iron Mining, etc.—It is reported that T. H. Worthington will develop mines and quarries on the Mineral Railroad.

Birmingham—Steel Mill.—Plans for the Birmingham Rolling Mill Co.'s proposed \$250,000 steel mill are now being inspected by the president of the company. Work is expected to be commenced soon; contracts already let for boilers, as lately reported.

Blount—Coal Mines.—The Cahaba Southern Mining Co., recently organized by T. H. Aldrich and P. B. Thomas, has opened a coal mine and intends to employ 150 men.

Columbus City—Electrical Works.—A Boston company is building works for the manufacture of electrical appliances.

Eufaula—Telephone System.—Stockholders in the proposed telephone system have elected directors E. B. Young, J. M. Edmonson, T. J. Ramsor and others.

Ironaton—Furnace.—The Clifton Iron Co. will put its furnace in blast.

Montgomery—Car coupler Works.—The Alabama Car & Equipment Co. has been organized to manufacture a car-coupler patented by James Davis of Greenville. J. J. Woodward is president, and J. M. Cox, secretary; capital stock \$100,000.

Rock Run—Furnace.—The Bass Furnace Co. has put its plant in blast; daily capacity forty tons.

Tecumseh—Washing Plant.—The Etna Iron Works has contracted for another steam ore washer, and when it is completed will employ altogether 200 hands.

ARKANSAS.

Arkadelphia—Cotton Mill.—C. F. Fowler and J. L. McLane, of Little Rock; Geo. H. Penn, J. S. O'Neal, W. H. Phillips and James Coates have incorporated the Ouichita Cotton Mills with a capital stock of \$250,000.

Arkadelphia—Cotton Mill.—C. F. Fowler and J. L. McLane, of Little Rock, and others have incorporated the Arkansas Manufacturing Co. with a capital stock of \$250,000 for manufacturing goods.

Fort Smith—Excelsior Factory.—The Southern Upholstering and Bedding Works will start an excelsior factory.

Fort Smith—Wagon Works.—Fish Bros., of Su-

perior, Wis., will remove their wagon works to Fort Smith, and employ 250 men.

Hamburg—Telephone Line.—The Hamburg & Portland Telephone Co. has been incorporated by J. D. Pugh, Chas. M. Woodward, J. H. Pryor, T. R. Pugh and T. B. Savage. The capital stock of the corporation is \$3000, and its object is the construction of a telephone line between Hamburg and Portland, nearly twenty-five miles.

Hot Springs—Iron Pyrites Mines.—A dispatch states that an extensive bed of rich iron pyrites has been found near Hot Springs, and that the Chappell Chemical Co., of Chicago, will test it.

Little Rock—Elevator.—Endeavors are being made for the erection of a grain elevator. Allen N. Johnson can be addressed.

FLORIDA.

Bartow—Phosphate Mines.—F. M. Stansbrough will erect a phosphate-mining plant.*

Hampton—Cannery and Ice Plant.—The Hampton Canning Co. will start the cannery lately noted.*

Palatka—Woodworking Plant.—Heston Bros. are erecting an extensive woodworking establishment for the manufacture of newells, balusters, etc.

Palatka—Coffin Factory.—F. A. Gerber & Sons have established a coffin factory.

GEORGIA.

Athens—Pants Factory.—The White Half Manufacturing Co. has put in additional machinery and increased operators by twenty-five hands.

Atlanta—Delinter Plant.—The American Manufacturing & Export Co., 78 Marietta street, will erect a cottonseed-delinter plant.

Augusta—Laundry.—Sturdivant & Stover are equipping a laundry plant in Silver Block.

Augusta—Box Factory.—The North Augusta Land Co. has contracted for the location of a box factory.

Columbus—Fertilizer Factory.—The Mutual Cotton Oil Co. contemplates erecting a 40-ton fertilizer factory.

Grantville—Cotton Mill.—The erection of a cotton mill is agitated by W. A. Post and others.

Jackson—Telephone Exchange.—S. B. Kinard contemplates constructing a telephone system.*

Lavonia—Cotton Mill.—Endeavors are being made to organize a cotton-mill company, over \$25,000 having already been subscribed.

Leesburg—Ginney and Grist Mill.—W. M. Larimore has contracted for a ginney, and later on will erect a grist mill.

Savannah—Marine Railway.—The Jones Marine Railway Co. has been incorporated by Joseph W. Jackson, Frances A. A. Jones and Florence H. Jackson to do a general ship-repairing and overhauling business.

KENTUCKY.

Lexington—Gas Company.—A report says that W. J. Loughbridge, D. F. Frazee and others are organizing a gas company.

Louisville—Engine Works.—The Wheeler Manufacturing Co. has been incorporated with a capital of \$25,000 by W. Meade Robinson, W. L. Glazier, George A. Foree, S. B. Queal, Reuben E. Champion, J. C. Bourne, John C. Hughes, Jas. P. Gregory, Humphrey Marshall, Robt. H. Wheeler, Ben. F. Gardner and Frank Day. The company proposes to build engines and manufacture all appurtenances for locomotives.

Louisville—Manufacturing.—Chartered: The Enterprise Manufacturing Co., by E. B. Sippett, W. L. Bridgeford and C. W. Tatton. The capital is \$10,000.

LOUISIANA.

Monroe—Saw Mill.—The Woodworth Lumber Co. will rebuild its \$40,000 burned mill.

MARYLAND.

Baltimore—Lumber Mill.—The Industrial Mill & Woodworking Co. has been incorporated for dealing in lumber, millwork, etc., by Dennis E. Reardon, Edward V. O'Keefe, Charles Hammer, George F. Fenner and Albert M. Hutchinson; capital stock \$6000.

Baltimore—Mantel and Tile Company.—The National Mantel & Tile Co. has been incorporated by John J. Kelly, Harry P. Boyd, Charles S. Houghton, S. Homer Calkins and J. Chambliss Doyle with a capital stock of \$50,000.

Baltimore—Refrigerating Plants.—L. W. Hopkins & Co. and the Filbert Manufacturing Co. have each put in a three-ton refrigerating plant.

Baltimore—Electric Plant.—The Canton, Sparrow's Point & North Point Electric Railway will probably build power-house of 1000 horse-power. F. W. Wood can be addressed.

Baltimore—Sugar Refinery.—The Baltimore Sugar Refining Co. will increase its capital stock from \$1,300,000 to \$1,950,000 in order to rebuild its

refinery burned over a year ago. The new plant is to have a daily capacity of 1500 barrels, and prospects for erecting it are very favorable, as the new stock finds a ready sale.

Cumberland—Iron Works.—W. A. Miller, of McKeesport, Pa., is reported as in Cumberland seeking a location for iron and steel pipe works.

Elkton—Bridges.—The county commissioners intend to build a number of new bridges.

Princess Anne—Saw Mill.—Cohn & Bock will rebuild their burned saw mill.*

Prince Frederickstown—Bridge.—The county road commissioners have called for bids on a 400 foot bridge.

MISSISSIPPI.

Fayette—Mill and Gin.—The Fayette Mill & Ginning Co., capital stock \$25,000, has contracted for its mill and cotton gin.

Moorhead—Saw Mill.—The Sunflower Lumber Co. will erect a large cypress mill.

Vicksburg—Fire-alarm System.—The city council has let contract for an electric fire alarm system.

Water Valley—Fire Department.—Charles Crowley and others have organized a fire company.

MISSOURI.

Memphis—Water Works.—The city will build water works; C. F. Sanders, mayor.*

St. Joseph—Rubber Company.—The McCord Rubber Co., capital \$500,000, has been incorporated by James, Samuel, S. and James H. McCord, John L. Peterman and Henry A. Walker.

St. Joseph—Woolen Mill.—The Tinker Woolen Manufacturing Co., capital \$25,000, has been incorporated by Joseph R. Tinker, Ernest L. Tinker, Harry S. Heard and Samuel Lowry.

St. Louis—Building.—The Chemical Building Co., capital \$400,000, has been incorporated by Jacob Christopher, Gustavus Schuchmann, Wm. S. Simpson, Robert Rutledge, Francis Kuhn and Estill McHenry.

St. Louis—Elevator Company.—The Burlington Elevator Co., capital stock \$150,000, has been incorporated by Charles D. McLure, J. C. Van Blarcom, F. W. Biebing, Charles Hodgman and Wm. L. Green, Jr.

St. Louis—Manufactory.—Incorporated: The Patton's Adjustable Shelving Co., to manufacture shelving, etc., by John W. Patton, John C. Anderson, L. D. Moore; capital stock \$50,000.

NORTH CAROLINA.

Blue Wing—Cotton Mill.—W. Raker and associates will build \$125,000 cotton mill.*

Blue Wing—Copper and Refining Plant, etc.—W. Raker and associates are arranging for the location of copper-smelting and electrolytical-refining works.*

Bynum—Cotton Mill.—The J. M. Odell Manufacturing Co. is placing \$15,000 worth of new machinery in its mill.

Charlotte—Mercantile.—E. J. Heath, E. S. Reid and J. C. Hough have incorporated the Charlotte Jobbing & Commission Co. for buying and selling cotton, etc.; capital stock is to be \$12,000.

Concord—Cotton Mill.—The Cannon Manufacturing Co. will increase its capital stock by \$63,000 to erect the new 5000-spindle and 125-loom plant noted last week.

Durham—Cotton Mill.—The Erwin Cotton Mills Co. will double its present plant's capacity. The mill now has 11,000 spindles and 300 looms.

Gibsonville—Cotton Mill.—The Minneola Manufacturing Co. has put in new boiler and engine, sixty-four looms, etc., and will put in electric lights and automatic sprinklers.

High Point—Cotton Mill.—It is reported that the Empire Plaid Mills will erect a big addition.

Island Ford—Cotton Mill.—J. H. Yount, Horace Yount, of Iredell, and Yount & Shrum, of Newton, have organized the Riverside Cotton Mills, capital stock \$50,000, and will erect a plant of 5000 spindles, to be operated by water-power.

Kinston—Knitting Mill.—The Orion Knitting Mill contemplates putting in new machinery.

Monroe—Water Works.—The Monroe Water Works & Ice Co. is soliciting stock with the intention of constructing a plant. J. D. Helms is interested.

Mt. Holly—Cotton Mill.—The Nims Manufacturing Co. is reported as to enlarge.

Raleigh.—The Philadelphia Lithia Water Co. has been incorporated with \$100,000 capital. The incorporators are E. Baird and Warren Harper, of Philadelphia, and William Middleton, of Harrisburg, Pa. The charter gives the right to buy and sell mineral land and bore for mineral or medicinal waters.

Raleigh—Cotton or Flour Mill.—W. V. Clepton and Jno. C. Drewry will erect a flour or cotton mill.

Salisbury—Gold Mines.—The Glen Brook Mining

Co. will probably be organized to develop gold mines, and the erection of a 1500-ton ore plant is contemplated.

Sanford—Lumber Mills.—Lumber plants will be located on the line of the Sanford, Lillington & Eastern Railroad; J. D. Boushall, director, Raleigh.*

SOUTH CAROLINA.

Alice—Cotton Mill.—A. T. Manship, H. H. Newton and S. B. and R. D. Moore have incorporated the Marlboro Manufacturing Co. to build mill at Factory Mills; capital stock \$40,000.

Langley—Cotton Mill.—The Langley Manufacturing Co. has increased capital stock from \$600,000 to \$700,000 to erect its 12,000 spindle and 350-loom additional mill lately reported.

Spartanburg—Soap Factory.—Geo. W. Henneman has organized the Carolina Soap Works and will erect a plant.

Spartanburg—Cotton Mill.—The Fairmont Yarn Mill will put in 200 looms.

Spartanburg—Starch Factory.—H. W. Jordan, of Syracuse, N. Y., contemplates establishing a starch factory.

Sumter—Manufacturing.—Jno. S. Hughson, D. W. Cuttine and others will organize a \$100,000 manufacturing company.

Walterboro—Cotton Mill.—The Colleton Cotton Mills has been chartered to erect a plant. A. C. Shaffer, J. R. Stokes, A. Wichman and others are directors.

Weldon—Cotton Mill.—Organization has been perfected of the company to build the 12,000 spindle mill noted last week as to be started at Roanoke Rapids. Capital stock has been placed at \$200,000, and W. S. Parker, of Henderson, N. C., elected president.

TENNESSEE.

Anderson County—Coal Mines.—The Anderson County Mining & Manufacturing Co. has been organized to develop coal deposits in Anderson county. Jas. W. McCormick, of Clinton, is president, and J. L. McLaughlin, of Harriman, together with S. S. Miller, of Rhineland, Wis., and others, are interested. W. A. Gage, of Knoxville, is engineer.

Coal Creek—Coke Plant.—The Royal Coal & Coke Co. will build a new plant of 100 coke ovens with a daily capacity of 200 tons.

Johnson City—Furnace.—The Carnegie Furnace Co. is preparing to blow in its 150 to 200 ton furnace.

Knoxville—Laundry.—The Vendome Hotel will put in laundry apparatus.

Knoxville—Packing-house.—The East Tennessee Packing Co., recently organized with a capital stock of \$25,000, will build a packery, to include refrigerating machine of ten or twelve tons capacity.

Pikeville—Oil Mill.—Rickard & Rock will drill for oil.

TEXAS.

Conroe—Tobacco Works.—Chas. H. Williams and Geo. E. Mudgett, of Conroe; Geo. C. Marden, of Winthrop, Mass.; Frank C. Howe, of Boston, and J. S. Daugherty, of Houston, have organized the Texas Tobacco Growing & Manufacturing Co. for purposes indicated in title. The capital stock is \$100,000.

Dallas—Electric Devices.—Chartered: The Electric Protection Co. to supply electric devices for the protection of vaults, etc.; capital stock \$50,000; incorporators, Charles Goldstein, Henry Hersh and Wm. H. Garretson.

El Paso—Water Works.—The city will make thorough tests for artesian water; R. F. Campbell, mayor.

Galveston—Tannery.—Jay Bonight, of 2508 Grand avenue, Kansas City, Mo., will very probably build a tannery at Galveston.

Houston—Lumber Company.—The Crystal Springs Lumber Co., capital stock \$50,000, has been incorporated by D. M. and Geo. B. Angie, D. A. Hagerman and E. C. Stryker.

Port Lavaca—Brick Works.—Mr. Jacobson and associates will build brick works.

Simonton—Ginney.—R. W. Warren & Sons have let contract for an extensive ginney.

Stephenville—Oil Mill.—Captain Alexander is said to be organizing a company to erect oil mill.

Wichita Falls—Irrigation Plants.—Preliminary steps have been taken for irrigating 200,000 acres of lands. T. D. Wagner, J. A. Kemp and others are interested.

VIRGINIA.

Big Stone Gap—Coke Plant.—The Appalachian Coal & Iron Co. contemplates the construction of 500 coke ovens this summer and fall.

Buena Vista—Furnace.—The Virginia Development Co. has leased the Buena Vista furnace to the Rich Patch Iron Co. for three years. Repairs will be made, two new boilers and an engine

added and operations resumed shortly; capacity 125 to 150 tons daily.

Manchester—Woodenware Factory.—Richmond parties have started a box and butter-dish factory in the Manchester Ice Machine Co.'s building.

Marlboro—Fertilizer Factory.—The Marlboro Fertilizer Co. has been organized for manufacturing, with a capital stock of \$20,000. E. D. Mewman is president, and J. S. M. Bauserman, secretary and treasurer.

Norfolk—Cotton Mill.—It is reported that Connecticut parties will erect a 20,000 spindle yarn mill, and possibly a 50,000 spindle one.

Pocahontas—Factory.—M. W. Gurnes will erect a washboard factory.

Richmond—Quarry.—B. Binswanger, of 928 N. Third street, Philadelphia, Pa., has bought the Richmond granite quarry.

Roanoke—Shoe Factory.—The Roanoke Shoe & Harness Manufacturing Co. has been organized lately and started a factory; D. Horgan, manager.

Shenandoah—Water Works.—Contract for constructing a system of water supply has been awarded to James M. Berry, of Bedford City, Va., at \$17,000.

Suffolk—Lumber Mill.—Baltimore parties have leased the Gray Manufacturing Co.'s lumber plant, and will enlarge, improve and operate it.

WEST VIRGINIA.

Berkeley Springs—Sand Mine.—Richard Roman is mining glass sand.

Charleston—Tub Works.—Incorporated: The Maryland Fall & Tub Manufacturing Co., to manufacture and sell tubs, buckets, woodenware of every kind, etc., by E. Rautman, Clyde P. Byrd, E. Walton Frewington, Condon E. Varina, T. H. Bowne; maximum capital stock \$50,000.

Clarksburg—Timber Lands.—J. R. Balsley and A. J. Brown, of Connellsville, Pa., are negotiating for 4000 acres of timber land located seventy miles from Clarksburg.

Wheeling—Brick Works.—A charter was issued to the Wheeling Brick Co. for manufacturing brick, etc.; authorized capital \$100,000; incorporators, John E. Clater, James McFadden, R. J. McCulloch, W. J. Rowe and H. C. Houston.

BURNED.

Birmingham, Ala.—C. F. Wheelock's corn mill; loss \$20,000.

Frederick, Md.—B. F. Brown's ice factory and hay press; loss \$10,000.

Magnolia, N. C.—J. Baker & Sons' saw and grist mill; loss \$1000.

Monroe, La.—The Woodworth Lumber Co.'s saw and shingle mill; loss \$10,000.

Parmele, N. C.—The Parmele-Eccleston Lumber Co.'s three dry-kilns.

Princess Anne, Md.—Cohn & Beck's saw mill.

BUILDING NOTES.

Atlanta, Ga.—Contract has been let to the Woodward Lumber Co. for the erection of the Georgia State manufacturers' building.

Atlanta, Ga.—Proposals will be received until July 1 for building and erecting the Alabama State building after plans and specifications. Address Grant Wilkins, chief of construction.

Atlanta, Ga.—Depot.—The Southern Railway Co. will build a union depot.

Atlanta, Ga.—Hotel.—E. P. Black will build a 275-room hotel for temporary use during exposition. Bruce & Morgan are preparing plans.

Atlanta, Ga.—Hotel.—G. V. Gress and Harry S. Cassin will build a 75-room hotel.

Brunswick, Md.—City Hall.—The erection of a city hall is talked of. Address the mayor.

Charleston, S. C.—Theatre.—Plans have been prepared for constructing the Academy of Music. Alterations will include iron roof, iron tank for fire purposes, fire-proof asbestos curtain, complete set of scenery, etc. Steam heat, electric and gas fixtures and two steam power passenger elevators may also be used; cost \$150,000. Address W. T. Keogh, Academy of Music building.

Columbia, Miss.—Dormitory.—The trustees of the State Industrial Institute will erect a dormitory to cost \$15,000.

Donaldsonville, La.—Church.—M. T. Lewman & Co., of Louisville, Ky., have contract at \$36,568 to erect a Catholic church.

Dublin, Ga.—Courthouse.—Sealed proposals will be received until August 6 for the erection and completion of a brick courthouse building; plans and specifications at office of clerk Superior Court and at office of Bruce & Morgan, Atlanta; J. F. Fuller, chairman county commissioners.

Fort Smith, Ark.—Dwelling.—H. Ryan is preparing plans for residence for John Vails, to have hot water heating, etc.; cost \$800.

Galveston, Texas—Association Building.—Bids for erecting Y. M. C. A. building to cost \$46,000 will be wanted in about thirty days. C. W. Bulger, 2203 Avenue E, is architect.

Grafton, W. Va.—Bank Building.—The First National Bank will erect a building.

Kansas City, Mo.—Warehouse.—The Schwarzschild & Sulzberger Packing Co. will erect a warehouse to cost \$10,000.

Knoxville, Tenn.—Powers, Little & Co. have let contract to the Big Four Contracting Co. for the erection of five-story building, 25x140 feet, to cost \$25,000.

Knoxville, Tenn.—Hotel.—Plans are being prepared for a five-story 50x30 foot annex to the Vendome Hotel.

Louisville, Ky.—Dwellings.—The Phillips Investment Co. will erect a \$36,000 flats building, and the Liederkranz Home Association, a \$14,000 hall.

Louisville, Ky.—Clubhouse.—The Young Men's Hebrew Association will build a clubhouse to cost \$7000.

Marlin, Texas—Sanatorium.—A company has been organized, capital \$30,000, to build a sanatorium. Address Dr. S. P. Rice.

New Orleans—Schools.—Proposals will be received for the erection of three brick school buildings for the city of New Orleans, until 12 o'clock noon, Monday, July 1. Plans and specifications are now on file in the office of the city engineer. Address John Fitzpatrick, mayor.

New Orleans, La.—Residences.—A. Ganter has prepared plans for the erection of three brick houses for electric lighting, steam heating; cost \$40,000. De Pass & Behan have prepared plans for a residence for Mrs. E. D. James; cost \$5000. Chas. H. Moise has prepared plans for a residence for M. Faigy, to have hot air heating, etc.; cost \$5000. E. Mazureau Reynes has prepared plans for a residence for E. Howard M. Caleb, to have incandescent lighting, laundry fixtures; cost \$7200. Same architect has plans for dwelling for H. Pitard, to have incandescent lighting, laundry fixtures, hot-water heating; cost \$7000. Same architect has plans for residence for E. Chassagniol, to have laundry fixtures, hot water heating; cost \$4800. Same architect has prepared plans for fine residence for Edgar Le Blanc, to contain laundry fixtures, etc.

Newport News, Va.—Academy.—The Old Dominion Land Co. will erect a three story 50-room academy building.

Paris, Texas—College.—Professor Sims, of Weatherford, will build a \$10,000 college.

Petersburg, Va.—Hospital.—Contract awarded to J. C. Rowell at \$6320 for the erection of new addition to Central Lunatic Asylum.

Staunton, Va.—Hall.—Contract for building the Old Fellows' hall has been let to J. M. Wilson at \$10,000.

St. Louis, Mo.—Bank Building.—Arthur Johnson & Bro., of Omaha, have received contract to erect the Chemical Bank building at about \$500,000.

St. Louis, Mo.—Masonic Hall.—The Masonic Hall will probably be remodeled at a cost of about \$150,000, including new engines, boilers, elevators, etc.

St. Louis, Mo.—City Hall.—The sum of \$250,000 has been appropriated for additional work on the city hall, including heating and ventilating plants. Address the board of public improvements.

St. Louis, Mo.—Dwellings.—E. O. Wistler has permit to erect \$40,000 building and \$30,000 flats.

St. Louis, Mo.—Dwellings.—C. W. Kellogg & Son have prepared plans for thirty-eight residences of eight rooms each for Ira J. Hedrick, to have electric bells and lighting, furnaces, etc.; cost \$133,000. M. T. O. Allard has prepared plans for dwelling for Mrs. S. W. Paul, to have architectural iron and marble work, steam heating, etc.; cost \$7500. Same architect has prepared plans for dwelling for Mrs. A. K. Vickery to cost \$7000. Same architect has plans for dwelling for T. J. Wodling to cost \$4000. Same architect has plans for flat building for Geo. P. Spies; cost \$3000. The Foell Architectural Co. has prepared plans for flat building for H. Kumpff; cost \$5000. Barnett, Haynes & Barnett have prepared plans for a dwelling for J. Clark Way, to have architectural iron work, electric bells and lighting, steam heating, etc.; cost \$10,000.

St. Louis, Mo.—Warehouse.—J. L. Wees has prepared plans for a warehouse for W. B. Sloss & Bro., to have composition roof, architectural iron work, steam heating, etc.; cost \$4000.

Stuttgart, Ark.—Depot.—The Stuttgart & Arkansas River Railroad is arranging to build a brick depot.

Washington, D. C.—Dwellings.—Building permits issued to Francis & Schneider, dwellings, to cost \$21,000; J. W. Herron, dwelling, \$8000; St. Margaret's Church, building, \$7000; James Fraser, repairs, \$15,000; A. C. Barney, additions, \$6000; Nathaniel M. Key, addition, \$6000.

Washington, D. C.—Dwellings.—Eda Murphy will erect two dwellings to cost \$8500.

Gould & Eberhardt, the well-known tool and machinery manufacturers, of Newark, N. J., are very busy on automatic gear-cutters, shapers and drills, and have orders for some special machinery work. Owing to their quality, there is a growing demand for their goods, and they report a steady increase in orders "since election."

RAILROAD CONSTRUCTION.

Railroads.

Boulogne, Fla.—The St. Mary's, Lake City & Gulf road has been completed from Boulogne to Toledo. It is a feeder of the Plant system, and is owned by Brooks Bros. & Co., of Toledo, Ga. It is forty miles long, and will be used for hauling lumber and naval stores.

Brooksville, Ky.—A company has been formed to connect Brooksville with the Chesapeake & Ohio by building a standard-gage road eight miles long. Mr. Y. Alexander, cashier Brocken County Bank, may be addressed.

Buckhannon, W. Va.—Garnett Savage is surveying the Buckhannon, Point Pleasant & Tygart's Valley line, proposed from Buckhannon to the mouth of the Buckhannon river. It will be a feeder of the Baltimore & Ohio.

Chattanooga, Tenn.—The Lookout Mountain Incline & Lula Lake Railway Co. has begun construction of the line up Lookout mountain. It will be 4700 feet long, and a double track road employing cable power. Three cars will be used. The road will cost about \$75,000. J. F. Cross is manager.

Corinth, Miss.—George H. Bunch, of the Greenville, Nashville & Chattanooga road, advises the MANUFACTURERS' RECORD that contracts have been let for constructing twenty miles of the line to Arnold De Garis & Co., of Memphis.

Denison, Texas.—It is stated that the Texas & Pacific is negotiating with Denison people to build an extension from Sherman to Denison. The distance is about ten miles. J. W. Everman is manager at Dallas.

Donaldsonville, La.—The Bayou Lafourche & Gulf Railway Co. has been incorporated to build a road from Donaldsonville along the Bayou Lafourche to the Southern Pacific at Lafourche crossing. R. W. Edwards is president, and A. Bouchereau, treasurer; capital \$300,000.

Dunlow, W. Va.—The Guyandot Coal Land Association will build two miles of line to connect its mines with the Norfolk & Western system. J. C. Miller is superintendent.

Egypt, N. C.—President Henszey, of the Raleigh & Western, confirms the report that the company intends extending its line to a connection with the Southern system at or near Asheboro, N. C.

Eufaula, Ala.—The Chattahoochee Valley Railway Co., which is promoting a line from West Point, Ga., to Eufaula is securing stock subscriptions. The line is about eighty miles long.

Georgetown, Texas.—Supt. E. E. Calvin is making preparations to relay the Georgetown branch of the International & Great Northern road with steel rails and ballast it with gravel. The road is ten miles long.

Huntington, W. Va.—Cabell and Wyoming counties have voted to issue \$100,000 to assist the proposed Columbus, Huntington & Guyandotte Valley road surveyed up the Guyandotte valley. J. L. Caldwell, of Huntington, is one of its promoters.

Johnson City, Tenn.—The Ohio River & Charleston Company will decide the question of issuing bonds to complete the line at the meeting to be held June 27. John J. Collier is secretary.

Macon, Ga.—The Southern Company is relaying considerable of its line between Macon and Brunswick with heavier steel rails.

Mineola, Texas.—Secretary W. B. Teagarden, of the Mineola & Texas Company, writes the MANUFACTURERS' RECORD that the line will be forty miles long. People in Mineola and Pittsburg will take the necessary stock to build the line, which will open up a pine-timber area of 600 square miles.

New Orleans, La.—The Illinois Central is building a six-mile branch from Gramercy Mills to its main line. Superintendent Dunn has charge of the work.

Norfolk, Va.—A company is considering the idea of building an electric road from Berkley along the eastern branch of the Elizabeth river by way of Kempsville.

Okolona, Miss.—The promoters of the line from Grenada to Nettleton, seventy miles, by way of Okolona, have organized the Nashville & Mississippi Delta Company with R. H. Elliott, of Birmingham, Ala., president; H. L. Underwood, of Birmingham, Ala., general manager and treasurer; J. W. Buchanan, of Memphis, attorney. Bonds were authorized to be issued to complete the road.

Palm Beach, Fla.—Surveys are being made for an extension of the Jacksonville, St. Augustine & Indian River road towards Biscayne bay. C. O. Haines is chief engineer at St. Augustine.

Palm Beach, Fla.—Surveyors are running lines for an extension of the Jacksonville, St. Augustine & Indian River road from West Palm Beach to Biscayne bay, on the southeast coast, sixty five miles. J. R. Parrott, at St. Augustine, may be addressed.

Piedmont, Ala.—H. G. McCall and G. F. Moore, of Philadelphia, have been examining the route of the proposed road from Montgomery to Chat-

tanooga through Piedmont with the view of constructing it.

Sanford, N. C.—The MANUFACTURERS' RECORD is informed that the Sanford, Lillington & Eastern Company expects to begin work on its line about July 1. The road will be twenty-five miles long, and will be partly built by an issue of \$60,000 in bonds. Rolling stock, etc., will be needed. Address J. D. Boushall, Raleigh, N. C.

Washington, D. C.—The Washington & Georgetown Cable Railway Co. is considering the extension of its lines for three and a half miles in the suburbs. Henry Hurt is president, and D. S. Carll, chief engineer.

Waycross, Ga.—The Waycross Air Line, it is stated, is to be completed from Waycross to St. Mary's. It is to connect with the Atlanta & Florida road at Fort Valley, Ga. L. Johnson is general manager.

Electric Railways.

Baltimore, Md.—Contracts are being awarded for the branch of the City & Suburban Company's trolley system from Baltimore to Catonsville, six miles. Nelson Perin is president.

Baltimore, Md.—The Canton, Sparrow's Point & North Point road will be eight and a half miles long and equipped with the trolley system. The Maryland Steel Co. will furnish all the superstructure and steel rails. Sanford & Brooks are contractors. The company is now considering whether or not to build its own power-house. If built an equipment of at least 1000 horse power will be needed for operating dynamos. No rolling stock has been purchased as yet. F. W. Wood is one of the directors.

Baltimore, Md.—George A. Meeter, W. H. Crim and W. F. Porter are directors of a company which proposes to build an electric line from Washington road, in the southwestern suburbs, to Westport, Lansdowne, Mount Winans and Meeter's Pavilion on the harbor; capital stock is \$75,000.

Baltimore, Md.—The Baltimore Traction Co. will build about one mile of additional track on its Pimlico section.

Baltimore, Md.—The City & Suburban Railway Co. is planning an extension two and a half miles long from its Catonsville branch to Bonni Brae Cemetery in the suburbs. Nelson Perin is president.

Humboldt, Tenn.—A company is being organized to build an electric road from Humboldt to A'mo; the distance is eighteen miles.

Lake Charles, La.—The Lake Charles Street Railway Co. has increased its capital to \$15,000 with the view of extending its line into the suburbs. M. Meyer is general manager.

Portsmouth, Va.—The Portsmouth & Port Norfolk electric line has been completed and opened for operation. M. W. Mason is general manager.

Washington, D. C.—Bonds to the amount of \$100,000, it is announced, have been sold to pay for constructing the Washington & Great Falls electric road. J. P. Clark is president, and W. E. Lewis, secretary.

Machinery, Proposals and Supplies Wanted.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.

Brick and Tile Machinery.—Damon, Beaton & Co., Corsicana, Texas, want to correspond with manufacturers of fire brick, tile and pottery machinery.

Bridge.—The county commissioners' court of Waller county will receive bids until July 4 for building a bridge over the Brazos river; plans and specifications of said bridge will be on file in the office of the county clerk of Waller county after June 25. Address T. B. McDade, clerk county court, Hemstead, Texas.

Broom Machinery, etc.—E. Philips, Columbus, Ga., wants broom machinery and broom materials.

Canning Apparatus.—Taylor Bros., La Grange, Ky., want to correspond with manufacturers of fruit evaporators.

Canning Factory.—See "snuff factory."

Canning Machinery.—The Hampton Canning Co., Hampton, Fla., will buy canning machinery.

Cotton Machinery.—Angus Blue, Laurinburg, N. C., wants to buy machinery for manufacturing cotton.

Cotton Machinery.—The Cannon Manufacturing

Co., Concord, N. C., will want machinery for 4000 to 5000 spindles.

Cotton-mill Machinery.—The Long Shoals Cotton Mills, Lincolnton, N. C., will buy a Denu warper.

Cotton-mill Machinery.—W. Raker, Blue Wing, N. C., wants to correspond with manufacturers of cotton-mill machinery.

Cotton-ropes Machinery.—H. C. Robertson, Greenville, S. C., wants machinery for manufacturing cotton rope, with full particulars.

Copper-smelting, Refining, etc.—W. Raker, Blue Wing, N. C., wants to correspond with manufacturers of machinery for copper smelting, electrolytic refining, etc.

Electric Baths.—Thos. I. Rosser, Charlottesville, Va., wants electric baths.

Elevator and Fan.—The Valdosta Guano Co., Valdosta, Ga., wants to buy fan and seed cotton elevator machinery for ginners.

Fire-hose.—The Lott Fire Department, Lott, Texas, will buy fire-hose.

Grinding and Mixing Plant.—The Softene Manufacturing Co., Jackson and West streets, Baltimore, Md., wants a plant for grinding, mixing and filling soap powder, consisting of fifteen to twenty horse-power gasoline engine, mill to grind epsom salts, alum, borax, etc., a mixer and a filler for eight-ounce packages.

Grist Mill.—W. M. Laramore, Leesburg, Ga., will want a grist mill.

Horse Cars.—Jas. W. Tufts, Box 5339 Boston, Mass., wants two small and light horse cars, second-hand.

Horse-collar Stuffer.—Edwards Bros., Senoia, Ga., wants a horse-collar stuffer, designed, invented and built to stuff collar covered with duck and stuffed with lint cotton.

Ice Plant.—The Hampton Canning Co., Hampton, Fla., will buy ice plant.

Ironworking Machinery.—The Griffin Variety Co., Box 67, Griffin, Ga., wants to buy ironworking machinery.

Lumber Machinery.—The Greenville Lumber Co., Greenville, N. C., will buy band mill and equipments.

Mattress Factory.—See "snuff factory."

Mining Plant.—F. M. Stansbrough, Box 17, Bartow, Fla., will need mining plant for phosphate.

Oil Cabinet.—Wanted, catalogue or circulars showing cut and description of the Victor oil cabinet. Address Victor, care MANUFACTURERS' RECORD.

Portable Houses.—H. F. Cary, 311 Fitten Building, Atlanta, Ga., wants to correspond with portable-house builders.

Railway Equipment.—J. T. Bradshaw, Carrsville, Va., wants to buy or rent about a 10-ton second-hand locomotive engine and about five miles of second-hand rail to correspond with weight of engine; also wants logging car-wheels, or would buy second-hand cars if cheap; and he wants to hear from those who may have the above for sale, stating prices and terms.

Rails.—T. J. Williams, Brunswick, Ga., is in the market for three miles of 20 to 30-pound second-hand rails.

Rails.—The Guyandot Coal Land Association wants to buy new or second-hand 56-pound rails. Address J. C. Miller, superintendent, Dunlow, W. Va.

Railway Equipment.—The Sanford, Lillingston & Eastern Railroad is in the market for rolling stock, track equipments, etc. Address J. D. Boushall, director, Raleigh, N. C.

Saw Mill.—Cohn & Bock, Princess Anne, Md., will buy outfit for saw mill.

Scales.—Wanted, a 1000 to 2000-pound platform scale; also a 3000 to 4000-gallon tank. Address N 551, Sun Office, Baltimore, Md.

Starch Machinery.—B. A. Morgan, Greenville, S. C., wants information concerning the manufacture of starch, and wants machinery for same.

Snuff Factory, etc.—The Labor Exchange Branch, No. 55, Ocala, Fla., is seeking estimates on mattress factory, tannery, cannery and snuff factory of 100 to 1000 pounds daily.

Steam Plant.—The Cannon Manufacturing Co., Concord, N. C., will want steam plant complete.

Tannery.—See "snuff factory."

Telephone Equipment.—S. B. Kinard, Jackson, Ga., wants prices on telephone equipment for fifty to 100 subscribers.

Tobacco Machinery.—Dibrell Bros., Danville, Va., want to correspond with manufacturers of a machine for cleaning scrap off tobacco stems in moist condition.

Water Works.—Sealed proposals for constructing a system of water works will be received until July 1. For specifications address C. F. Sanders, mayor, Memphis, Mo.

Water Works.—The city of Union, Mo., will receive proposals until noon, July 20, on a complete water-works system; plans and specifications may be seen at the office of the city clerk, Union, or at the office of Wm. H. Bryan, the consulting engineer, Room 1, Turner Building, St. Louis.

Water-works Supplies.—The board of public

improvements, St. Louis, Mo., has appropriated \$185,000 for new plugs, stops, valves, etc., for the water system \$70,000 for laying pipes and \$220,000 for two new engines.

Woodworking Machinery.—C. W. Worth, Wilmington, N. C., wants machinery for manufacturing bungs, plugs, vents, etc.

Woodworking Machinery.—The Griffin Variety Co., Box 67, Griffin, Ga., wants to buy woodworking machinery.

Woodworking Machinery.—The Sanford Sash & Blind Co., Sanford, N. C., wants to buy a second-hand improved carving machine.

A Chance for Builders.

The Florida Home & Plantation Co., Room 76, Washington Loan and Trust Building, Washington, D. C., has purchased from the Disston Land Co., of Philadelphia 11,000 acres of land, which it contemplates settling up as rapidly as possible. It expects to clear and otherwise prepare small tracts of land of from five to twenty acres, and build houses on it, an irrigating plant, tank for wind-mill, etc. The houses will possibly vary in cost from \$175 to about \$1000. The company wants to have some one furnish the material and build houses, wind mills, etc.; in fact, to take a contract to do all of this work, and to do it promptly. If an arrangement can be made to include the entire matter, the contractors will have the exclusive work.

TRADE NOTES.

"THINGS are looking up quite brightly with us, and we anticipate a good season's business," is the cheery view of the outlook made by William A. Heffernan, proprietor of the Heffernan Stained Glass Works, Lynchburg, Va. The product of these works in art, stained glass for churches, residences, public buildings, stores, etc., ornaments many handsome structures throughout the country.

THE Cincinnati Edison Company has placed an order for four more 80-light Standard arc dynamos and Standard lamps. After the severe tests given the thirty-two 50 light standard arc machines previously purchased, and the creditable record made by the machines in the matter of no repairs to speak of, it is gratifying to the Standard Electric Co. to receive so plain a proof of the advisability of using Standard apparatus.

IN the movement of capital southward it should not be forgotten that the hardwoods of the South Atlantic States have had but little attention. They have hardly been touched, and in many cases local wants are supplied from localities farther north or west. There are excellent opportunities for manufacturing in that line, and one of the best is noted elsewhere by Howard Daniels, of Atlanta, Ga., in the advertising columns of this issue.

ONE of the largest sales of rails lately made in the South has been closed by the Southern Log Cart & Supply Co., of Mobile, Ala. This concern has contracted with T. G. Bush, president of the Mobile & Birmingham Railroad Co., to furnish 3500 tons of 60-pound steel rails for thirty-five miles of road between Mobile and Selma. The letting of this contract indicates the confidence of the railroad company in the season of prosperity which has set in, and shows the ability of a Southern establishment to handle orders of a large calibre.

THE Lindsay Bicycle Manufacturing Co., of La Fayette, Ind., was recently incorporated under the State laws of Indiana for the purpose of engaging in the manufacture of a patent two-speed bicycle. The company proposes to open up on quite an extensive scale, and will produce several thousand wheels per year. It has just placed an order with the Lodge & Davis Machine Tool Co., Cincinnati, Ohio, for the entire equipment of its plant, including several screw machines, sprocket-milling machines, hub-turning machines, cone machines, and in fact all too's entering into the manufacture of bicycles.

SOME unique electric motors are shown in a catalogue issued by the Commercial Electric Co., of Indianapolis, Ind. New ideas are embodied in the construction of these motors which, judging by the repeated success attained, give this company's product distinctive advantages. It is building dynamos and motors for power, lighting and railway purposes. A large number of sizes are made for both belt driving and direct connection. The extent of such applications is shown by a series of tables in the catalogue. An illustrated description of the moderate speed bi-polar dynamos and motors is given. The catalogue is brief and to the point, and presents in concise style a comprehensive review of a type of electrical machinery that is winning fame and wide adoption by reason of its superior performances.

CHARLOTTE, N. C.—The Buford Hotel, Charlotte, N. C., has recently been remodeled and refitted, and is receiving a liberal share of patronage. The new proprietors, Messrs. Farintosh & Amer, are both experienced hotel men, and every department is in the hands of capable assistants.

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Low Rates to Boston.

The Christian Endeavor, United Society of the National Young People's Union meets in Boston July 10 to 14.

For this occasion the B. & O. R. R. will sell excursion tickets from all points on its lines east of the Ohio river, July 8 to 11, inclusive, valid for return passage until July 31. These tickets will be sold at rate of one fare for the round trip going and returning same route. Tickets will also be placed on sale good going via one route and returning via another at slightly advanced rate.

For rates of fare and full particulars call on or address nearest B. & O. agent.

THE D. & C. new steamers are now running four trips per week between Toledo, Detroit and Mackinac. Send for their illustrated pamphlets, Midsummer Voyages to Mackinac. Address A. A. Schantz, G. P. A., Detroit.

THE *Southern States* magazine is read by thousands of farmers, fruit-growers, stock-raisers and business men in all the North, West and Northwest, who are looking to the South as a future home and are trying to inform themselves as to the relative advantages of different parts of the South. If you have farm, garden or orchard property for sale the *Southern States* will put you into communication with buyers. Send for sample copy and rates. Manufacturers' Record Publishing Co., Baltimore, Md.; Wm. H. Edmonds, editor and manager.

Low Rates to Denver.

The B. & O. R. R. Co. will place on sale at all ticket offices on its lines east of the Ohio river round-trip tickets to Denver, Colorado Springs, Manitou and Pueblo for all trains of July 2, 3, 4 and 5, valid from starting point on day of sale, and good returning from Colorado points July 12 to 15, inclusive. The rate from Baltimore and Washington will be \$47.50, and correspondingly low rates when from other stations. Tickets will be good via St. Louis or Chicago.

THE celebrated "Hoosac Tunnel Route" of the Fitchburg Railroad, from Troy, New York, to Boston, Mass., passes through the most magnificent scenery to be found in all New England, so old tourists say. For miles the cars run along the bluff above the Deerfield river, every foot of the journey being full of enjoyment to those to whom beautiful mountain scenery is interesting. To see this part of New England requires a detour from beaten paths, but it is worth the extra outlay of time required. The service of the Fitchburg Railroad is first-class in every respect, equal to the best roads in the country.

Short Journeys on a Long Road

Is the characteristic title of a profusely-illustrated book containing over 100 pages of charmingly-written descriptions of summer resorts in the country north and west of Chicago. The reading-matter is new, the illustrations are new, and the information therein will be new to almost everyone.

A copy of "Short Journeys on a Long Road" will be sent free to anyone who will enclose ten cents (to pay postage) to Geo. H. Heafford, general passenger agent Chicago, Milwaukee & St. Paul Railway, Chicago, Ill.

Friday and Saturday Excursion to Seashore via Pennsylvania Railroad.

Commencing Friday, June 14, and Saturday, June 15, and continuing each Friday and Saturday until August 31 inclusive, the Pennsylvania Railroad will sell from Baltimore excursion tickets to Atlantic City, Cape May and Sea Isle City for trains leaving Union Station 10 55 A. M. and 12.05 noon, at the remarkable low rate of \$4 for the round trip, including transfer of passengers through Philadelphia in each direction. Tickets good for return passage until following Tuesday inclusive.

Summer Vacation Tours.

The Baltimore & Ohio Railroad Co. now has on sale at all its offices east of the Ohio river a full line of tourist excursion tickets to all the lake, mountain and seashore resorts in the Eastern and Northern States, and in Canada. These tickets are valid for return journey until October 31. Before deciding upon your summer outing it would be well to consult the B. & O. book of "Routes and Rates for Summer Tours." All B. & O. ticket agents at principal points have them, and they will be sent postpaid upon receipt of ten cents by Chas. O. Scull, general passenger agent, B. & O. R. R., Baltimore, Md.

\$25,000 Town Bonds.

PULASKI CITY, VIRGINIA, will issue \$25,000 of coupon bonds of \$500 denomination, to run twenty-five years from July 1st, 1895, bearing six per cent. interest, payable semi-annually, July and January, at the Chase National Bank, New York City.

Said Bonds are Made Payable in Gold or Its Equivalent.

Investors desiring a first-class security will do well to address

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Pulaski City, Va.

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PROPOSALS.

BIDS TO CONSTRUCT AND MAINTAIN WATER WORKS.—Sealed bids will be received at the office of the City Clerk of Greenville, Miss., up to the second (ad) day of July, 1895, to construct and maintain water works in the city, city granting a twenty-five year franchise. Or to construct works for the city, water to be taken from wells. Specifications on file in Clerk's Office. Council reserves the right to reject any and all bids. By order of City Council of Greenville, Miss., J. M. LEE, City Clerk.

NOTICE TO CONTRACTORS FOR CITY LIGHTING.

MAYOR'S OFFICE,
VICKSBURG, MISS., June 5th, 1895
Proposals will be received at my office until 7:30 P. M., July 15, 1895, for the lighting of the city of Vicksburg with 81 Arc Electric Lights, 1200 candle-power; 34 Incandescent Electric Lights, 50 candle-power, for periods of three years and of five years. Specifications of contract on file in City Clerk's office. Board reserves the right to reject any or all bids.
W. L. TROWBRIDGE, Mayor.

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87 MAIDEN LANE, N. Y. JERSEY CITY, CHICAGO, PHILADELPHIA, BOSTON, LONDON

THE UNDERSIGNED HAVE PURCHASED,
and now offer

AT PAR AND INTEREST,

SUBJECT TO SALE OR
ADVANCE IN PRICE,

\$350,000**CITY OF RICHMOND, VA.**

Thirty-Four Year
Four Per Cent.

Registered

Refunding Bonds,

Issued for the Redemption of Outstanding 5 Per Cent. Bonds, which have been called in for payment.

INTEREST JANUARY AND JULY.

PRINCIPAL DUE 1929.

The total bonded debt of the city (including this issue) is.....\$7,178,000 00

Property owned by the city, and not included in taxable values, consisting of Gas Works, Water Works, Public Buildings, Parks and Lands, estimated value.....5,264,161.07

Receipts from Gas and Water Works, 282,366 00

The debt is limited by charter to eighteen per cent. of assessed value of REAL ESTATE. TAX RATE, \$1.40 per \$100.00.

Assessed Value Real Estate.....\$44,475,094
Assessed Value Personal Property 20,667,781

Total.....\$65,142,875

A Sinking Fund of one per cent. per annum for all Bonds issued is required by the Charter.

In spite of the conditions existing during and after the war, Richmond has never defaulted upon any of its obligations, either principal or interest.

Deliveries will be made to purchasers, in sums to suit, upon the opening of the transfer books, JULY 1st, 1895.

The five per cent Bonds, which have been called in for redemption July 1, 1895, will be received at par and interest to that date in payment for these bonds.

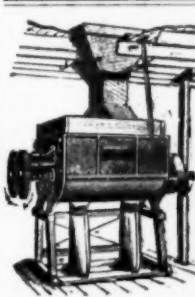
MARYLAND TRUST COMPANY,

BALTIMORE, MD.

MERCANTILE TRUST AND DEPOSIT CO.
OF BALTIMORE, Baltimore, Md.

DAVENPORT & CO., Richmond, Va.

If you wish to keep posted on the progress of the South, read the Manufacturers' Record. Price \$3 a year.



THE BROUGHTON
DRY MIXER,
FOR
Hard Plaster, Cement, Paint, &c.
W. D. DUNNING,
86 W. Water St.
SYRACUSE, N. Y.

The Boomer & Boschert

HYDRAULIC

PRESS

FOR BALING

Cloth, Paper, Yarn, &c.
Or for any other purpose requiring great pressure.

BOOMER & BOSCHERT PRESS CO.
366 W. Water St., Syracuse, N. Y.

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Equal to Manuscript—Keeps your Mind Clear.

Writing always in plain sight
And the price is also right.

Dr. S. F. Scovel, of Wooster, Ohio, says: "I find the Daugherty eminently satisfactory as to speed, clearness and manifolding, and above all, valuable in keeping the text absolutely visible."
Discount to Clergy.

The Daugherty Typewriter Co.

P. O. Box 1260 D. 7 Sixth Street, PITTSBURGH, PA.

SPECIAL Advertisements OF GENERAL Interest.

OPPORTUNITIES FOR INVESTORS.

5,000,000 ACRES of choice Fruit-Growing, Farming, Trucking and Tobacco Lands; Pine, Cypress and Hardwood Timber Lands; Phosphate and Kaolin Lands for sale in Florida and South Georgia. Low prices and easy terms. Titles perfect. All information regarding properties or other matters cheerfully given. Write for catalogue. **HUBER & NICHOLSON**, opp. Duval Hotel, Jacksonville, Fla.

A BARGAIN.

I have a beautiful cherry set of **DRUG STORE** furniture with Bevel Plate Mirrors. One of the handsomest outfits in the State. Will sell it very cheap. Correspondence solicited.

F. S. ROYSTER, Adm'r, D. B. N. Estate O. C. Farror.

TARBORO, N. C.

FOR SALE OR LEASE.—Marble Mill and Forty Acres of Finest Tennessee Marble. One quarry, twenty acres of Pink Marble. Mill located at Loudon, Tenn. Buildings nearly new and in good repair. All machinery in first-class condition. Mill has been running up to December 1st, 1894. Has river and railroad facilities. Will sell mill separate from quarries if so desired.

Address **H. H. SUTTON, AURORA, IND.**

FOR SALE.—Large lot of fine

Poplar Timber.

Convenient to good floating water. Can all be manufactured at one plant, which can be located on either of two trunk lines, which cross the stream below the timber. For particulars address **HOWARD DANIELS, Atlanta, Ga.**

FOR SALE.

A Magnificent Saw Mill

in South Georgia, complete. Daily capacity 50,000 feet 50,000 acres of Long-Leaf Yellow Pine timber at a bargain. Terms easy. Will take lumber in part payment. Address **LAND TRUST CO. OF GEORGIA**, 2½ South Broad Street, Atlanta, Ga.

Phosphate Plant for Sale

Located in South Carolina.

MACHINERY ALL NEW.

Two miles of Railroad Track, Locomotive Cars, Washer, Engine and Boiler, and about 300 acres of first-class Phosphate Land. A rare opportunity. Can be bought considerably below original cost. For particulars and terms address

THE CAMERON & BARKLEY CO., Charleston, S. C.

Saw Mill

FOR SALE

TO CLOSE AN ESTATE.

Almost new, Engine, Boiler, Band Mill, Lath and Tacket Mill, Trucks, etc.
Also 6000 feet T Rails.
Sold at a bargain on very easy terms.
Address

WOOLVERTON & TINSMAN,
WILLIAMSPORT, PA

To Woodworking Industries.

I control a never-failing water-power, estimated at 100,000 horse-power, within eighteen miles of George Vanderbilt's estate at Asheville.

Also have 800 ACRES OF HARDWOOD TIMBER LAND, consisting of Oak, Walnut, Hickory, Locust, Poplar and Chestnut, situated on both sides of the river; own a saw and planing mill in good running order, but have no money.

This is a bonanza to any Wagon, Carriage or Furniture industry, and to any such with capital will offer every inducement.

For further particulars apply to

THOMAS TURNER,

Bat Cave, Henderson County,
North Carolina.

FOR SALE. CORUNDUM

Fine bed of KAOLIN and two large and valuable CORUNDUM properties. Whole or part interest. For particulars write

F. R. HEWITT, Hewitt, Swain County, N. C.

A Most Excellent Opportunity

to make a profitable investment.

The owners of a fine sixty-barrel Patent Process Roller Mill

Want to Enlarge it and get outside parties interested.

The property includes a high-grade water ground meal mill. A desirable water power which is at present running to waste.

Has best of railroad facilities and all conveniences for running at a profit.

Address **J. L. M., care Manufacturers' Record.**

Manufacturing Plant

FOR SALE.

Large Brick Buildings, Thirty Acres Land, Fine Water Power, Railroad through property, several tenements. **PRICE LOW.** Terms to suit purchaser. Must be sold.

C. H. EVANS,

HUDSON, NEW YORK.

FOR SALE.

A Handsome, Large

Modern Residence

And a Beautiful Old

Colonial Residence

with modern conveniences, both in the city of Charleston, S. C. The City of Charleston water supply is obtained from artesian wells, and it has recently been proven to be a valuable dyspeptic cure and a rheumatic cure when bathed in. Both of these residences are supplied with this water.

Timber and Farming Lands and Rice Plantations

situated in Colleton and Berkeley Counties. For further particulars address

Exchange Banking & Trust Co.
Charleston, S. C.

SEAMLESS BAG PLANT

FOR SALE.

AT REIDSVILLE, N. C.

July 12, 1895, at 2 o'clock P. M.

A complete modern plant for the manufacture of Seamless Sacks. The whole of the machinery is new, having been in operation only nine months, is in first-class condition, and is one of the most complete plants in the country. Consisting of the following:

- 1 30 h. p. Boiler, by Thos. K. Carey & Bro.
 - 1 Pump 3x2x3, by H. Worthington & Son.
 - 1 Pump 5½x3½x5, by H. Worthington & Son.
 - 1 25 h. p. Engine, by Thos. K. Carey & Bro.
 - 1 Feed-water Heater (Cochrane).
 - 1 Dynamo, 50 lights, by Westinghouse Electric Light Co.
 - 1 Switchboard.
 - 50 Bag Looms, by Lewiston Machine Co. (As these Looms are of the latest improved and best make, they can be used to make Duck, Sheetings and other coarse fabrics.)
 - 1 Beaming Frame, by Thos. Wood & Sons.
 - 1 Drawing-in Frame.
 - 1 Two Screw Power Press, by Luddell Machine Co.
 - 1 Swinging Brackets with Fire Hose and Nozzles.
 - 4 Sewing Machines and Tables.
 - 1 Water Tank (5000 gallons).
- Also all necessary and extra shafting, piping, hangers, pulleys, belts and belting, shuttles, oil tanks, oil cans, benches, trucks, platform scales, watchman's clock, fire buckets, electric light plant, electric light globes and all necessary supplies for repairs.

Sale Under Order of Superior Court.

TERMS OF SALE.—One-fourth cash at sale, residue in three equal instalments, at three, six and nine months, with interest from day of sale. Sale subject to confirmation of Court, and title retained until full payment of purchase money.

A. H. MOTLEY, JR., Receiver.
REIDSVILLE, N. C.

Balsum Mountain, N. C.

Rich in tin, gold, nickel and corundum. Containing 5000 acres, more or less. Splendid water power. Valuable timber. **FOR SALE.**

A. S. DAVIS, Port Deposit, Md.

FOR SALE

AT A

GREAT BARGAIN.

The Baxter Stove Works, Birmingham, Ala. Railroad connections with all the trunk lines. A complete outfit for manufacturing stoves, ranges, hollow ware, grates, etc., with a capacity for working one hundred moulders. For particulars and terms write to

J. F. B. JACKSON,
Birmingham, Ala.

IF you are thinking of enlarging your mill, factory or mine, or of purchasing machinery of any kind, send us a postal card giving character of machinery desired.

FOR SALE

At a large reduction,

One carload strictly first-class Heavy Deadening Felt.

Must be sold at once. Address **S. P. C., care of Manufacturers' Record.**

FOR SALE.

One Trevor Make of HANDLE LATHE

of the latest pattern. Machine is second hand, but can be guaranteed as good as new in every respect, having been in use only two months.

FORCE & BRIGGS,

508 and 510 Liberty St., PITTSBURGH, PA.

MACHINERY FOR SALE.

Engines, Boilers, Pumps, Shafting, Pulleys, Hangers, Lucop Mills, Mixers, Pans, Disintegrators, Rock Crushers, Steam Elevators, Leather and Rubber Belting, Scales, Steam Fire Engines, 50 bbl. Copper Brewer's Kettle and Fixtures, Iron Tramway Cars and Turntable, Iron Tanks, Canvas Covers, Wire, Hemp and Manila Rope, Anchors, Chain, Blocks, &c. Highest price paid for Scrap Iron, Metals, Old Rubber, &c.

N. B. WOOLFORD, 916 S. Broadway, Baltimore, Md.

FOR SALE.

- 2 60-h. p. Atlas Steel Return Tubular Boilers.
- 1 35-h. p. Erie City Boiler and Engine, mounted.
- 1 9x12 Center Crank Engine.
- 1 24 in. Fay Surfacers.
- 1 Fay Tenoning Machine.
- 1 Fay Mortiser.

ROBT. S. ARMSTRONG & BRO., Atlanta, Ga.

FOR SALE.

- One 24-in. Re-Saw, with countershaft.
 - One 24-in. Planer, with countershaft.
 - One 16-in. Swing Cut-Off Saw.
- All in perfect condition, and but little used. Sold only for want of room.

THE SADLER CO.

126 West Fayette Street, BALTIMORE.

FOR SALE AT A SACRIFICE

a Plain 100 H. P. Engine, made by Stanhope & Supplee. Extra heavy pattern. Cylinder 11x30. Bandwheel 10 ft. x 16 in., on 6½ in. shaft. Metal Piston Head. Sight-feed Lubricators. Pat. Grease Cups. All in really A1 condition. May be seen running until 1st September, at our works, 4523 Tacony St., Frankford, Philadelphia. **Milner Lock Co.**

A RARE BARGAIN.

One 80 H. P. Nordberg Engine.
Latest Improved, Automatic Governor
f.o.b. cars, Chicago, \$1000
Used but six months, cost \$1800.

Two 80 H. P. Tubular Boilers.

Made by the Atlas Co. Indianapolis, Ind., with stack, connections, gauges, fronts, braces, g. aies, etc., cost \$1800 used but six months. \$1000 f.o.b. Chicago.

M. NIRDLINGER,

360 Farwell Avenue, MILWAUKEE, WIS.

For Sale.

Two Second-hand Corliss Engines

24x48, 300 h. p. each, and BOILERS.

Two Vertical Corliss Engines

40x48.

Write for particulars and prices.

ROBT. WETHERILL & CO.
CHESTER, PA.

MACHINERY AND APPARATUS FOR SALE.

We have for sale the following Machinery and Apparatus, in good condition, which we offer for sale at reasonable prices:

Four (4) 10x16 in. Straight Line Engines, built by the Straight Line Engine Co., of Syracuse, N. Y.

Two (2) 52 in. x 12 ft., three (3) 60 in. x 16 ft. and three (3) 62 in. x 16 ft. Tubular Boilers.

Twenty-five (25) Double Frush-Adams Arc Lamps, 2000 C. P.

Twenty-five (25) Single Brush-Adams Arc Lamps 2000 C. P.

IRON PULLEYS.

No.	Diameter, inches.	Face, inches.	Bore, inches.
1	48	14	3 3/4
4	48	12	3 3/4
1	36	12 1/2	3 3/4
1	32	8 1/2	3 3/4
1	32	8	3 3/4
1	31 1/2	14	3 3/4
1	30 1/2	20	3 3/4
2	30 1/2	22	3 3/4
2	30 1/2	22	3 3/4
1	30	25 1/2	3 3/4
1	30	14	3 3/4
3	26	9	3 3/4
1	26	8 1/2	3 3/4
1	25 1/2	16 1/2	3 3/4
2	24	10	3 3/4
3	24	9 1/2	3 3/4
3	20 1/2	9 1/2	2 3/4
1	20	9	2 3/4
1	18	5	2 3/4
1	16	12 1/2	2 3/4
9	16	8 1/2	2 3/4
1	12	12 1/2	2 3/4
1	10	8	3 3/4
1	9 1/2	6 1/2	2 3/4
1	6	6	1 3/4

PAPER PULLEYS.

3	16	12 1/2	2 3/4
1	16	9	2 3/4
4	13	13	2 3/4

ADJUSTABLE PEDESTALS.

13 3 3/4 x 15 1/2 in.

SHAFTING.

- 1 Length 3 3/4 in. 21 ft., 2 in.
- 1 " 3 3/4 in. 9 ft., 6 in.
- 2 " 3 3/4 in. 11 ft., 0 in.
- 1 " 3 3/4 in. 8 ft., 0 in.
- 3 " 3 3/4 in. 4 ft., 0 in.

Address

BRUSH ELECTRIC LIGHT & POWER CO.
SAVANNAH, GA.

Second Hand TOOLS

LATHES.

- 1 12x 4 Putnam Lathe.
- 1 14x 4 Putnam Lathe.
- 1 15x 6 Pratt & Whitney Lathe.
- 1 18x 8 Pratt & Whitney Lathe.
- 1 20x 8 Niles Lathe.
- 1 20x 8 Sellers Lathe.
- 1 20x14 Sellers Lathe.
- 1 22x10 Niles Lathe.
- 1 24x16 Sellers Lathe.
- 1 24x18 Leonard Lathe.
- 1 26x13 Gleason Lathe.
- 1 26x20 Pond Lathe.
- 1 30x22 Pond Lathe.
- 1 30x28 Sellers Lathe.
- 1 34x14 Stentoe Lathe.
- 1 36x18 Perkins Lathe.
- 1 42x24 Putnam Lathe.

PLANERS.

- 1 15x15x3 New Haven Planer.
- 1 16x16x 3 Pratt & Whitney Planer.
- 1 24x24x6 Bancroft Planer.
- 1 24x24x7 New Haven Planer.
- 1 42x25 New Haven Planer.
- 1 25x25x6 Bancroft Planer.
- 1 26x26x 6 Lodge & Davis Planer.
- 1 30x30x10 Bement Miles Planer.
- 1 30x30x7 Sellers Planer.
- 1 31x34x7 New Haven Planer.
- 1 36x36x8 Niles Planer.
- 1 36x36x10 Whi comb Planer.
- 1 36x36x12 New Haven Planer.

DRILLS.

- 1 5 ft. Niles Plain Radial Drill.
- 1 16 in. Blaisdel Drill.
- 1 20 in. Prentice Drill.
- 1 20 in. Lodge & Davis Sliding Head Drill.

SHAPERS.

- 1 8 in. Crank Shaper.
- 1 15 in. Traveling Head Shaper.
- 1 20 in. Lodge & Davis Crank Shaper.
- 1 26 in. Lodge & Davis Geared Shaper.

MILLING MACHINES.

- 1 No. 4 Brainard Milling Machine.
- 1 No. 3 Garvin Milling Machine.
- 1 Kempsmith Milling Machine.

MISCELLANEOUS.

- 1 8 ft. Greenwood Boring Mill.
- 1 18 in. Turret Chucking Lathe.

NEW TOOLS.

- Engine Lathes 14 to 40 in. swing.
- Planers 24 to 54 in. wide.
- Drill Press 12 to 42 in. swing.
- Radial Drills 3, 4, 5 and 6 ft. arms.
- Shapers 14, 16, 21 and 26 in. stroke.
- Plain Milling Machines (4 sizes).
- Universal Milling Machines (4 sizes).
- 3/4, 1, 1 1/4, 1 1/2 and 2 in. Screw Machines.
- 12, 15 and 18 in. Monitor Lathes.
- 12, 14 and 15 in. Hand Lathes.
- 1 1/2 in. and 2 in. Automatic Bolt Cutter.

THE LODGE & DAVIS
MACHINE TOOL CO.

CINCINNATI, OHIO, U. S. A.